SECONDARY TEACHERS' PERSPECTIVES ON ADOLESCENT CONTENT AREA READING

by

RUTH ALLMAN

B.Ed., The University of British Columbia, 1974
M.Ed., The University of British Columbia, 1981

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

in

THE FACULTY OF GRADUATE STUDIES

(Language and Literacy Education)

THE UNIVERSITY OF BRITISH COLUMBIA

December, 2006

© Ruth Allman, 2006
Abstract

This cross-sectional survey study was designed to investigate secondary teachers' beliefs, attitudes and reported practices related to content area reading and strategy instruction. The survey was conducted with 119 teacher leaders in eighteen secondary schools in a large multicultural school district in Western Canada during the spring of 2004. Respondents were selected because of their subject area expertise and leadership role in the field.

Key findings were that respondents: (a) identified struggling readers in their classes as predominately male and typically in grades 8-10; (b) indicated that students struggled with comprehension and critical reading skills; (c) identified external factors as hindrances to students' successful literacy development; (d) indicated inadequate knowledge of content area reading instructional strategies; (e) reported a limited range of assessment tools used; and (f) identified obstacles related to, and a need for, programs and professional development that address the needs of struggling readers.

It is concluded that there are three key areas of knowledge that teachers need in order to help students read content area materials: (a) knowledge of assessment tools that will help them identify areas in which their students struggle; (b) knowledge of content reading strategies that are integrated into disciplinary teaching, together with formative assessment that will support instructional decision-making; and (c) long-term and situated professional development programs in content area reading and strategy instruction that are sensitive to the context of their professional lives and that facilitate learning communities in schools.
# TABLE OF CONTENTS

Abstract .................................................................................................................. ii

Table of Contents ..................................................................................................... iv

List of Tables .......................................................................................................... vi

List of Figures ......................................................................................................... vii

Acknowledgements ................................................................................................. ix

Dedication ................................................................................................................. x

**CHAPTER 1** The Research Problem .................................................................. 1

  - Background to the Problem of Content Area Reading ........................................ 1
  - Old and New Conceptions of Literacy .................................................................. 4
  - Adolescent Literacy Assessment ......................................................................... 9
  - The Relationship Between Literacy and Academic Success .............................. 15
  - Purpose of the Study ........................................................................................ 17
  - Chapter Summary and Overview of the Following Chapters ........................... 18

**CHAPTER II** Historical Perspectives of Content Area Reading ...................... 20

  - Paradigms Associated with Content Area Reading ............................................ 21
  - Pioneering Times for Reading Research—1900s and 1910s .............................. 23
  - The Behaviorist Era—1920s to 1960s ................................................................. 28
  - The Cognitive Era—1950s and 1960s ................................................................. 40
  - Information Processing Theories, Approaches and Models .............................. 45
  - Theories and Models of the Reading Process .................................................... 47
  - Reevaluation of Theories—1970s and 1980s .................................................... 52
  - Theories of Schema and Metacognition ............................................................. 52
  - Practices—Cognitive Teaching and Learning Strategies .................................... 58
  - The Constructivist Era—1990s and into the future ........................................... 74
  - Complexities of the Adolescent Population ..................................................... 78
  - Teacher Education and Teacher Research ....................................................... 88
  - Paradigm Shifts in Teacher Education ............................................................. 89
  - Research Studies with Pre-Service and In-service Teachers ........................... 99
  - Summary of Historical Perspectives of Content Area Reading ..................... 107

**CHAPTER III** Methodology ................................................................................. 109

  - The Planning Stage .......................................................................................... 109
  - Research Design .............................................................................................. 111
  - Survey Instrument .......................................................................................... 112
  - Data Collection Procedures ........................................................................... 121
  - Data Entry Procedure .................................................................................... 123
Data Analysis Procedures ......................................................... 124
Limitations of Methods Used ..................................................... 125

CHAPTER IV Research Findings .................................................. 127
Respondents Demographics and Worklife .................................... 127
Respondents Perceptions of Struggling Students ......................... 134
Assessment and Evaluation Techniques ....................................... 147
Instructional Methods, Strategies and Resources ......................... 152
Instructional Programs and Special Services ............................... 164
Teacher Support and Content Area Reading Needs ...................... 170

CHAPTER V Discussion and Implications ..................................... 178
Identifying Struggling Readers .................................................. 178
Perceptions of Why Readers Struggle ........................................ 184
Issues Related to Teachers' Knowledge of Content Area Reading .... 191
Implications for Professional Development / Learning Communities ... 197
Limitations of the Study .......................................................... 200
Suggestions for Further Research ................................................. 201
Conclusion ............................................................................... 201

Bibliography .............................................................................. 202
Appendix 1 Questionnaire .......................................................... 230
Appendix 11 Behavioral Research Ethics Certificate of Approval .... 241
Appendix 111 Questionnaire Cover Letter .................................... 242
Appendix 1V Follow-up Postcard ............................................... 244
LIST OF TABLES

Table 1  Respondents' demographic characterist.................................130
Table 2  Number and percentages of teacher leadership positions ............132
Table 3  Number of subjects, classes, and students taught and class sizes.....133
Table 4  20th Century Generational Life Cycles by number of respondents
          age, decade of birth, K-12 education and teacher training...............192
| Figure 1 | Respondents' perceptions of percentage of struggling readers in grades 8 to 12 | 135 |
| Figure 2 | Respondents' perceptions of percentage of students struggling with word recognition skills | 137 |
| Figure 3 | Respondents' perceptions of percentage of students struggling with text-level reading skills | 139 |
| Figure 4 | Respondents' perceptions of the percentage of students struggling with critical reading skills | 140 |
| Figure 5 | Respondents' perceptions of the percentage of students struggling with graphic aids | 142 |
| Figure 6 | Respondents' perceptions of the percentage of students struggling with study skills | 143 |
| Figure 7 | Percentage of respondents who received students' school information | 148 |
| Figure 8 | Percentage of various assessment techniques used by respondent | 150 |
| Figure 9 | Percentage of respondents who used various grouping methods | 152 |
| Figure 10 | Percentage of respondents who used five instructional formats | 154 |
| Figure 11 | Percentage of respondents who used various instructional strategies | 156 |
| Figure 12 | Percentage of respondents who used various instructional resources | 158 |
| Figure 13 | Percentage of respondents who used instructional aids | 159 |
| Figure 14 | Percentage of respondents who provided instruction on the use of text structures | 160 |
| Figure 15 | Percentage of respondents who encouraged out-of-school reading | 162 |
| Figure 16 | Percentage of reported factors hindering delivery of content area reading programs | 167 |
Figure 17a  Respondents level of knowledge about teaching content area reading and strategy instruction. .............................................................. 170

Figure 17b  Respondents level of satisfaction with their knowledge about content area reading and strategy instruction. .............................. 170

Figure 18  Percentage of times respondents reported attending in-service programs in the years 2001 to 2004. .............................................. 171

Figure 19  Percentage of respondents who desired various In-service programs. ................................................................. 172
ACKNOWLEDGEMENTS

Back in 1974, I wrote my thesis for my Master of Education Degree on a typewriter. It seems to me that the last thirty-two years have gone by in the blink of an eye. This dissertation was written on a computer, something that was not even imagined when I began my teaching career.

I wish to thank my doctoral committee, Dr. Theresa Rogers, Dr. Lee Gunderson and Dr. Elizabeth Lee, for their help, support and guidance.

I am grateful to the staff and faculty of the Department of Language and Literacy of the University of British Columbia, who provided a warm welcome and support to me when I returned to my studies.

Thanks to Dr. John Shapiro who, back in the 1970s when I expressed my love of learning, and when a PhD. was not a part of my frame of reference, assured me that I could always come back when I retired, which I have done.
DEDICATION

This dissertation is dedicated to all of the people who contributed their invaluable time, talents and efforts. Thanks to my kids, Deborah, Dan, David and Catherine, for believing I could do it, and a special thanks to my husband Sam, PhD helper extraordinaire, for always being there.

They say it takes an entire village to raise a child, and to complete this dissertation it took a somewhat smaller village to guide me along the path from where I started to where I’ve arrived.

With much gratitude.

Ruth Allman
CHAPTER I
The Research Problem

The need for and importance of content area reading instruction has been an enduring focus throughout the twentieth century, and is a highly visible educational, political and social issue for policy makers, researchers, teacher educators, administrators and practitioners in the political scene in the United States and Canada (Alvermann, 2004; Cassidy & Cassidy, 2005/2006; Hinchman & Moje, 1999; Moje, Young, Readence, & Moore, 2000; Moore, Bean, Birdyshaw & Rycik, 1999; Santa, 1999; Vacca, 1998).

Today's adolescents, the Net Generation (Tapscott, 1998), are encountering increasingly complex and difficult academic reading and writing tasks at both the intermediate and secondary levels. The high number of struggling readers and the related high dropout rate has been referred to as a literacy crisis (Biancarosa & Snow, 2004; Gee, 1988). In order to investigate one aspect of this crisis, this study investigates secondary teachers' beliefs and attitudes about content area reading and their instructional practices.

Background to the Problem of Content Area Reading

During the twentieth century and into the twenty-first century there has been an increasing awareness of the need for content area reading instruction. In the 1990s Vacca (1998) raised the issue of adolescent literacy neglect, and Santa (1999) stated, "Adolescents are being shortchanged. No one is giving adolescent literacy much press. It is certainly not a hot topic in educational policy or a priority in schools" (p. 97). This sense of urgency culminated in the International Reading
Association (IRA) Commission’s position statement on adolescent literacy in which Moore, Bean, Birdyshaw and Rycik (1999) observed:

Adolescents entering the adult world in the 21st century will read and write more than at any other time in human history. They will need advanced levels of literacy to perform their jobs, run their households, act as citizens, and conduct their personal lives. They will need literacy to cope with the flood of information they will find everywhere they turn. They will need literacy to feed their imaginations so they can create the world of the future. In a complex and sometimes even dangerous world, the ability to read will be crucial. Continual instruction beyond the early grades is needed (p. 99).

Cassidy, Garrett, & Barrera (2005/2006) reported that this IRA position statement was followed by the inclusion of the generic topic of adolescent literacy as a hot topic in the 2001 What’s Hot, What’s Not survey in the IRA’s list of hot topics in reading and reading instruction. The topic of adolescent literacy remained a hot topic on the IRA survey through to 2005, and became a “very hot topic” and “should be hot” in the IRA’s 2006 listing. They further noted that the reason for the continued attention to adolescent literacy was “the extension to adolescent readers of the No Child Left Behind (NCLB) legislation in the United States” (p. 33). A number of publications by reading researchers Biancarosa and Snow (2004) and Kamil (2003) from the Alliance for Excellent Education have continued to keep adolescent literacy in the spotlight in the United States.

Adolescent literacy was also a ‘hot topic’ in British Columbia when the 2001 BC Foundation Skills Assessment (FSA) results were released, in which it was reported...
that twenty-five percent of the grades 4, 7 and 10 students were reading below the BC Performance Standards and had inadequate literacy skills (www.bced.gov.bc.ca/assessment/fsa/results). Subsequent administrations of this test have produced results consistent with the results published in 2001, indicating this is a consistent and ongoing phenomenon. In BC there is a renewed focus on literacy in curriculum documents, policy statements and in the popular media. Provincial legislation mandates that educators strive for greater literacy success for all students.

Content area reading was ushered into this new century with a new look, new labels and a renewed focus on the need for adolescent literacy instruction at the secondary level. A number of American professional organizations and policy groups in the private sector published significant treatises that promoted a vision for research and action in relation to middle and high school literacy (Biancarosa & Snow, 2004; Carnegie Corporation of New York, 2006; Kamil, 2003). There have also been publications in support of the implementation of instruction at the school level (Alvermann, 2001; Vogt & Shearer, 2003). These are timely and much needed publications because teachers in all content areas are finding that the responsibility is being placed upon them to help students become independent, self-aware readers and writers (Begoray & Sanford, 2002). In addition, the use of information communication technology (ICT) and its tools in classrooms has grown tremendously, contributing to the amount of information to which students are exposed. As Luke (2000) asserted, pedagogy has not altered sufficiently to meet
the needs of diverse populations in this rapidly changing context, leaving teachers
and principals struggling to come to grips with the change.

**Old and New Conceptions of Literacy**

Viewing the concept of literacy through a historical lens aids in understanding
the changing face of adolescent literacy, adolescents' literacy needs, and content
area reading and strategy instruction. Defining and understanding the term literacy,
a slippery concept to grasp, is complicated because there is no consensus on a
single definition. Knoblauch observed that literacy is one of those mischievous
concepts, like virtuousness and craftsmanship, that appears to denote capacities but
that actually conveys value judgment (as cited in Alvermann & Phelps, 2002). From
Guth and Pettengill's (2005) perspective, the current usage of the term implies an
interaction between social demands and individual competence. Gee (1988) noted,
"no literacy is politically neutral, including the institutionally based literacy of church,
state, and school that has and continues to undergird the hegemonic process in
Western society" (p. 208).

There has been a creeping change of scope from the conventional dictionary
definition of literacy to new, multidisciplinary ones. Historically, the term was most
commonly defined as "the quality or state of being literate especially the ability to
read and write" (The Random House College Dictionary, 1972, p. 782). However,
the term has become a catchword for well over forty different types of literacy and
the list continues to grow. Bean, Bean, and Bean (1999) noted that the meaning of
the term fluctuates from one context to another. Vacca and Vacca (2002) concurred,
stating, "the more researchers inquire into literacy and what it means to be literate,
the more complex and multidimensional the concept becomes" (p. 15). This is evident in the changing terms and expanding views of literacy and content area reading throughout the twentieth century.

**Changing Descriptive Literacy Language**

New language is continually used to identify and describe terms such as reading research, content area reading, secondary reading and content area reading research. *Reading teacher education* is now referred to as *literacy teacher preparation* (Lenski, Grisham, & Wold, 2006). *Secondary reading* became identified as *adolescent literacy*, a connotation that is broader in scope than secondary reading and more inclusive in what counts as text, such as digital texts and hypertexts (Alvermann, 2001). Content area reading became identified as one aspect of content literacy. Content area literacy research now falls under the umbrella of adolescent literacy (Bean, 2001). Moje, Young, Readence, and Moore (2000) asserted that the older term *secondary reading* invokes the image of outdated remedial reading labs isolated from the foundation subject and other content area classrooms. As well, they viewed *content area reading* as aligned exclusively with school and subject-based literacy, whereas *adolescent literacy* encompasses the multiple literacies of the Internet, compact discs, music, television, magazines and other forms of print, sign systems and media (Bean, 2001; Vogt & Shearer, 2003).

**Content Area Reading**

McKenna and Robinson (1990) were credited with being the early proponents, if not the originators, of the adoption of the term *content area reading,*
which is similar in meaning to the term used in the late 1960s and 1970s “reading in the content areas. They defined content area reading as:

The ability to use reading and writing for the acquisition of new content in a given discipline. Such ability includes three principle cognitive components: general literacy skills, content specific literacy skills (such as map reading in social studies), and prior knowledge of content (p. 184).

The changing scope and variations on the definition and descriptions of content area reading and instruction practices reflect the expanding views that were anchored in broader notions of text, reader based research in cognitive science, and the social constructive views of learning and teaching. As Moore, Readence, & Rickelman (1983) noted:

The specialty of content area reading instruction came about in recognition of the fact that readers require various strategies when they study particular subject areas and read many kinds of materials for different purposes. Content area reading instruction is designed to deliver those strategies. To date, the primary mission of this instruction is to develop students' reading-to-learn strategies (p. 420).

Anders and Guzzetti’s (1996) view was even more comprehensive, in that it included “using different texts for different purposes, critical thinking about texts, other forms of symbolic communication—like television and computers—and collaboration between authors and readers” (p. 20). McKenna and Robinson’s stated position in 1997 was very general in comparison to their 1990 statement previously described. They stated that literacy “represents skills needed to acquire knowledge
of content" (p. 9). Vacca and Vacca (2002) defined content literacy as “the ability to use reading and writing to learn subject matter in a given discipline” (p. 15). Readence, Bean, and Baldwin (1981) had a more inclusive view, describing content area literacy as “the level of reading and writing skill necessary to read, comprehend, and react to appropriate instructional material in a given subject area” (p. 4). O’Flahavan and Seidl (1997) defined literacy from a sociocultural perspective as “a cultural act constrained by cognitive, social, and motivational dimensions of the reading process” (p. 203). Bean (2000, 2001) also viewed content area literacy from a contemporary perspective and as having even more dimensions:

A cognitive and social practice involving the ability to read and write about multiple forms of print, including textbooks, novels, magazines, internet material and other sociotechnical sign systems conveying information, emotional content, and ideas to be considered from a critical stance (Bean, 1999, as cited in Bean, 2001, retrieved May 13/06 from http://www.readingonline.org/research/bean.html).

In this new millennium the literacy focus has been broadened from a narrow focus on reading to include writing and oracy. Content area reading has become identified as one aspect of content literacy. Today, literacy is conceptualized as a meaning making process in which knowledge of phonemic awareness, phonics, vocabulary, fluency and comprehension all must be orchestrated successfully (Block, Gambrell, & Pressley, 2002; National Institute of Child Health and Human Development, 2000). As students progress through the grades, demands in content area literacy increase, and the other essential components of vocabulary, fluency
and literacy comprehension remain critical to and interrelated for successful readers (Snow, Burns, & Griffin, 1998; Stanovich, 2000).

This connotation of the term literacy suggests a complex of skills including the analysis, evaluation and synthesis of information across media (Serim, 2003). These multiple literacies require skills that extend far beyond 'the school sanctioned literacies' (O'Brien, 1998) that are the conventional reading and writing practices associated with print literacy.

The Literacy Crises

While national and international scholars are concerned with bridging the cognitive and sociocultural perspectives on literacy, others are concerned with what are seen as the literacy crises. Gee (1988) noted, "crises are a recurrent motif in the history of literacy" (p. 196). Verhoeven & Snow (2001) reported that the Netherlands and the United States provide a global perspective and a "new way of looking (at various sorts of) literacy crises" (p. 2). They also pointed out that individual definitions of literacy crises vary enormously.

In the developing world the term literacy crises refers to the "crucial role of literacy in economic development combined with restricted literacy skills in the population, limited access to schooling, and the challenges of implementing universal schooling and adult literacy programs simultaneously" (Verhoeven & Snow, 2001, p. 1). In North America and Europe, literacy crises refers to the "severe inequities in the distribution of literacy skills [and] to the fact that members of immigrant and minority groups and children attending the schools that serve these groups are at enormously higher risk of failure than the population as a whole" (ibid).
In the developed nations with close to universal literacy, the term literacy crises refers to the fact that the "literacy skills members of the workforce possess are insufficient to meet the new challenges associated with the increasingly sophisticated technical, electronic and computer-based demands of even blue-collar jobs" (ibid). These views reflect Resnick and Resnick's (1997) research findings, which suggest "with changed standards come changed estimates of the adequacy of a population's literacy" (p. 126), not only because of the importance of reading in all academic areas, but also because of the importance of reading outside school settings.

**Adolescent Literacy Assessment**

In North America the media often characterize the apparent gap in adolescents' literacy achievement, as indicated by major literacy assessments, as a literacy crisis. The issue of adolescent literacy continues to be characterized by terms such as *neglect* and *crisis*, and there are dire predictions, including the statement that "the proportion of students at every grade level who are not engaged or motivated by their school experiences grows at every grade level and reaches epidemic proportions in high school" (Biancarosa & Snow, 2004, p. 9). As well, disturbing findings from the National Assessment of Educational Progress's (NAEP, 2000) reading assessment of a national representative sample of students showed that eighth graders' average performance had remained flat since the 1998 tests, and twelfth graders' reading achievement had declined at all performance levels (as cited in Kamil, 2003).
A heavy premium has been placed on literate behavior that requires citizens to acquire literacy for personal, social, academic and economic success. The aim is to have a broader spectrum of students attaining higher levels of academic achievement than at any previous time in history (Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999). Bean (2001) suggested that if content area reading is embraced as a social practice then it is tied to larger societal needs and the world of work. This connection is supported by Barton's (2000) report on changing literacy demands:

Between 1996 and 2006 the average literacy required of all American occupations is projected to rise by 14 percent. The twenty-five fastest growing professions have far greater than average literacy demands, while the twenty-five fastest declining professions have lower than average literacy demands (as cited in Biancarosa & Snow, 2004, p. 8).

The issue of workplace literacy, that is the situational demands placed on workers' reading and writing, which vary from job to job, is evident in the February 25, 2002 article on education in Business Week entitled The Time Bomb in the Workforce. Concerns are raised in the article about "the failure of US schools to keep pace in an increasingly competitive global economy" (as cited in Bernstein, 2002, p. 22), and the writer bemoans the fact that "the fastest-growing groups (16 to 25 year-olds) in the United States not only underperform their foreign counterparts but also do so to a greater degree than Americans over 40" (ibid). In British Columbia similar concerns were expressed. For example, in October 2002, Clark reported that the BC Minister of Education stated "we hear [reading is a problem] from employers, we hear this from post-secondary institutions [who report]
that they see kids who come from high school whose reading level isn't anywhere near what it should be given the 13 years and the $5 billion that we've invested in those kids' education" (Vancouver Sun, p. A3).

Contentious debates over adolescent literacy, gender differences in learning outcomes, literacy assessment and curriculum reform are highly visual, educational, political and social issues in the academic literature (Alvermann, 2004; Gambell & Hunter, 2004; Hinchman & Moje, 1997; Luke & Elkins, 2000; Moje, Young, Readence, & Moore, 2000; Tierney, 2000), and in the popular media. Assessment on adolescent literacy is conducted and reported at the international, national, provincial and local levels.

**International Assessment**

The Organization for Economic Cooperation and Development (OECD, 2000, 2003) conducted large-scale surveys of adolescent literacy titled *Program for International Student Assessment* (PISA) in 32 school systems in developed countries. The surveys assessed the ability of 15 year-olds to use literacy in reading, mathematics and science, and their ability to apply their learning to different situations. Reading literacy was defined as “understanding, using and reflecting on written texts, in order to achieve one’s goals, to develop one’s knowledge and potential, and to participate in society” (as cited in Bussiere & Gluszynski, 2004, p. 7). Canada ranked second in reading, fourth in problem solving, sixth in mathematics and fifth in science. American students ranked tenth on the reading scale and twenty-third on problem solving. Only Finland and Korea performed better on the reading scale than Canada. Changes in Canadian and American students’
average reading performances and problem-solving results were not statistically significant over the three-year period from 2000 to 2003.

National Assessment

At the national level, the Stats Canada/HRDC/National Literacy Secretariat published the *Literacy Skills of Canadian Youth* (1997), a national literacy survey. In this survey the term literacy was defined as “the ability to read and comprehend written materials, including reports, documents, and mathematical charts and displays; to use that information to solve problems, evaluate circumstances and make decisions; and to communicate that information orally and in writing” (Willms, 1997, p.5). The results of this survey showed that the literacy scores of youth aged 16 to 25 varied considerably between provinces. Manitoba and Saskatchewan youth scored more than one year of schooling above the national average. The youth from British Columbia, Alberta, Nova Scotia and Quebec scored near the national average. Ontario, New Brunswick, Newfoundland and Prince Edward Island youth scored the equivalent of one year of schooling below the national average.

These national assessments provided a Canadian perspective and were followed by two Canadian symposia in 2005 and 2006 that continued to provide a Canadian perspective on adolescence and learning. The purpose of the symposia was to “develop deeper conversations over time on issues in education that transcended the participating organizations mandates” (retrieved July 4, 2006 from http://www.cea-ace.ca/home.cfm). The 2005 symposium was called Adolescents and learning: Their future in our World. The issue discussed was a broad one, that “education had become a critical element in the social and economic well being of
our society—and of the world—it is widely accepted that all young people need to be able to make a successful transition to adult roles at work, in the community and in the family” (retrieved July 4, 2006 from http://www.cea-ace.ca/home.cfm).

For the 2006 symposium Getting it Right for Adolescents, the issue discussed was more specific, “at a time when education is considered crucial to prepare young people for their role in an increasingly complex and integrated world is it time to transform the structures of high school in order to better meet the needs of adolescent learners?” (Retrieved July 4, 2006 from http://www.cea-ace.ca/home.cfm). These are pertinent issues for students, teachers and schools.

**Provincial Assessment**

At the provincial level, the BC Ministry of Education conducts the *Foundation Skills Assessment* (FSA) annually to assess grades 4, 7 and 10 students' reading and math skills. In 2001, test results from this assessment showed that 25 percent of BC students were reading below grade level. In 2002, results showed that 29 percent of Grade 10 students, 24 percent of Grade 7 students and 20 percent of Grade 4 students were reading below the *BC Performance Standards–Reading*, developed for voluntary use in BC schools (http://www.bced.gov.bc.ca/perf_stands/).

Assessment of Grade 10 students on the FSA was discontinued in 2005, and instead students are now required to write provincial government examinations. The FSA results are widely published in the newspapers, drawing the attention of policy makers and parents to students' literacy. For example, in November 2001 Clark reported that the BC Minister of Education stated "there’s something wrong with the system that we need to fix. If one in four children is not graduating from high school,"
we have a problem we need to address” (Sandler & Beatty, 2001, pp. B1-B2). In October 2002 the Ministry stated, "Investments in time [and] money are not paying dividends for many is evident.... We can do better" (Mclnnes & Petti, 2002, p. A3).

It is of interest to note that results from the British Columbia Ministry of Education's tests on reading with grades four, seven and ten students often illustrate that about 25% of students do not meet the British Columbia Foundation Skills' assessment standards.

**Local Assessment**

At the local level, students' literacy abilities, or rather the purported lack thereof, was headlined and featured in the Vancouver press and in the news media. Headlines in the Vancouver Sun on November 22, 2001 blared, “25 per cent of BC students can't read at grade level” (Steffenhagen, 2001, p. A1). A distribution map in that newspaper showed that eleven of eighteen high schools had students in grades 8 to 10 with “reading scores...below the district average” (ibid). The same newspaper's headlines shouted “Reading Wars: BC Students Pay the Price in Dispute Over Teaching Methods”. This public debate over methods of teaching reading in the education literature, and in the public sector, is an ongoing one that detracts from what is crucial at this time (Stanovich, 2000), the necessity of helping struggling readers learn to become strategic readers.

Indeed, there is an urgent need to know more about the literacy skills of the adolescent population in British Columbia who are journeying through the intermediate and secondary grades – particularly among those students who are reading below grade level and appear to have inadequate academic literacy skills to
succeed at the secondary level. This study takes a closer look at this issue by examining secondary school teachers' beliefs, perceptions and attitudes toward adolescent content area reading among their diverse student population with increasing and changing abilities and needs.

**The Relationship Between Literacy and Academic Success**

Recent American data profiling the reading scores of middle and high school American students and dropout rates suggest that reading test scores of secondary students in the United States have not improved over the past thirty years (Kamil, 2003; Biancarosa & Snow, 2004). The National Center for Education Statistics (NCES) reported in 2003 that there were more than eight million struggling readers in grades 4-12 in schools across the United States (as cited in Biancarosa & Snow, 2004). As well, the results of the 1998 National Assessment of Education Program (NAEP) found that 33% of grade 8 students and 40% of grade 12 students performed at or above the level of solid academic performance, and close to 70% of those starting grade 9 and 60% those in grade 12 were considered to be reading below grade level (ibid). At the same time, more than 3000 American students drop out of high school every day (Alliance for Excellent Education, 2003, as cited in Kamil, 2003). One of most commonly cited reasons for the high dropout rate is that students simply do not have the literacy skills to keep up with the high school curriculum, which has become increasingly complex (Kamil, 2003; Biancarosa & Snow, 2004).

Vacca and Padak (1990) tabulated a number of risk factors to identify students who are unlikely to graduate (likely to drop out of school). These risk
factors are (a) low achievement, (b) retention in grade, (c) behavior problems, (d) poor attendance, (e) low socioeconomic status, and (f) attendance at school with large number of poor students. The Alliance for Excellent Education warned that “there are approximately 8.7 million fourth through twelfth graders in America whose chances for academic success are dismal because they are unable to read and comprehend the material in their textbooks” (as cited in Kamil, 2003, p. 1). In 2006 the Canadian Education Association reported that dropout rates were sometimes as high as 30%, and asked:

At a time when education is considered crucial to prepare young people for their role in an increasingly complex and integrated world is it time to transform the structures of high school in order to better meet the needs of adolescent learners? (retrieved July 4, 2006 from http://www.cea-ace.ca/dia.cfm?subsection=the&page=ado).

As well, Anderson and Gunderson (2001) found that “many immigrant children experience difficulties in the schools in their new countries – they fall behind, fail to meet their potential, or drop out” (retrieved June 12, 2006 from http://www.readingonline.org/electronic/elec_index.asp?HREF=anderson/index.html)

However, there are notable results from the *Youth in Transition Survey* (YITS) report, a Canadian longitudinal survey that tracked students’ movement between high school, postsecondary education and the labour market from 1999 to 2003. The proportion of young people who had graduated from high school increased steadily during this period. In 1999, 75% of students’ aged 18 to 20 had their school diploma and by the end of 2003 this number had increased to almost 90%. One-quarter of
high school dropouts managed to graduate during this period. Eight percent of these dropouts graduated from high school by December 2002 and this proportion had more than tripled to 27% by the end of 2003 (Statistics Canada, 2006; The Daily: Youth in Transition Survey: Update of the Education and Labour Market Pathways of Young Adults, retrieved July 11, 2006 from http://www.statcan.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=4435&lang=en&db=IMDB&dbg=f&adm=8&dis=2).

These results suggest that despite the high drop out rate in Canada, students’ valued education sufficiently to persevere despite negative experiences they may have had during their high school years. The results from the YITS survey suggest a proportion of the dropout population may have fallen through the cracks, wanted to do better, and needed to be helped to learn how to learn and study. Enough is now known about “both the nature of the problems of struggling readers and the types of interventions and approaches to address these needs” (Biancarosa & Snow, 2004, p. 10) to help students such as these have more successful school experiences.

Purpose of the Study

The purpose of the research was to investigate secondary teachers’ beliefs and practices about educational factors that influence adolescent content area reading. Seven research questions related to secondary teachers’ beliefs and practices guided this survey study. These research questions were:

1. What are teachers’ understandings of the reading process?
2. What are teachers’ attitudes toward content area reading and strategy instruction?
3. What are teachers' beliefs about their own students' content area reading abilities and skills?

4. What are teachers' experiences with assessment and evaluation of their own students' reading abilities and skills?

5. What types of instructional methods, strategies and resources do teachers use in their own content areas to help students learn from texts?

6. What types of programs and services are available to teachers for their students?

7. What are teachers' attitudes toward content area reading and strategy instruction?

Several related assumptions guided this study. They were:

1. Teachers may have insufficient information about students' reading abilities and skills.

2. Teachers who have taken content area reading courses are more likely to recognize their students' academic reading needs.

3. Teachers who have taken content area reading courses are more likely to acknowledge the benefit of reading and strategy instruction in content areas.

4. There may be substantial variability in strategy instruction methods used by teachers within and across disciplines.

5. There may be substantial variability in the types of strategies used by teachers within and across disciplines.

**Chapter Summary and Overview of the Following Chapters**

This chapter contains (a) the purpose of the study, (b) the background to the study, the research problem and the research questions, and (c) a discussion of the
importance of the study. Chapter II is a literature review of content area reading and strategy instruction during the twentieth century, and includes a discussion of the adolescent and teacher populations. Chapter III explains the research methodology and statistical procedures used in the data analysis. Chapter IV reports the results of the statistical analysis of each research question. Chapter V includes a discussion of the findings, conclusions and implications.
CHAPTER II

Historical Perspectives of Content Area Reading

The purpose of this literature review is to trace the historical antecedents of current views of content area reading and literacy in relation to the survey *Secondary Teachers' Perspectives on Adolescent Content Area Reading*. The study investigated secondary teachers' beliefs, attitudes and practices about content-area reading and strategy instruction. This literature review situates content area reading within a historical context that traces the emergence, development and expansion of content area reading and strategy instruction as a specialty in the reading field during the 20th century, and identifies the predominant paradigms and teaching practices in content area reading and strategy instruction. The review contains an historical overview of the early foundations of reading research that were established by experimental psychologists from around the beginning of the century to the 1920s. This is followed by a discussion of the behaviorist era and movement, which provides an understanding of behavioral features and trends in reading and learning that were rooted in the behavioral philosophy of learning that developed from the early 1920s through to the 1960s. The discussion then moves on to the era of the cognitive revolution and the rise of cognitive psychology resulting in the cognitive movement, which had a tremendous impact on the field of reading, content area reading and strategy instruction. Finally, there is an examination of the rise of the social constructivist era and movement, and what Bean (2000, 2001) described as the social constructivist dimensions on reading in the content areas (Vacca, 2002). This is followed by a discussion of the changes and the trends that emerged in
reading teacher education and teacher education that were aligned with the paradigm shifts in content area reading and strategy instruction. Finally, reading teachers’ roles and the adolescent population they work with is discussed.

Paradigms Associated with Content Area Reading

Reading and Study Skills Paradigm—1900s to 1960s

From the 1900s through to the 1960s content area reading and strategy instruction was based on a theoretical framework, described as the *Reading and Study Skills Paradigm* (Vacca, 2002). In this theoretical framework instruction was skill based, and consisted of text learning and instructional techniques. Locus of instruction focused on two instructional approaches during this period, a *direct* instructional approach and a *functional* instructional approach (Anders, Hoffman, & Duffy 2000; Moore, Readence, & Rickelman, 1983; Vacca, 2002). In an explicit, direct instructional approach, or *transfer* approach, reading and study skills instruction was taught outside the content classroom, and was based upon the assumption that students would automatically use or transfer a learned strategy to other subject areas while reading. In a functional approach, or *content centered* approach, reading instruction for course materials was embedded within the context of the content. The use of this approach was based on the assumption that instruction was facilitated best in authentic settings with content teachers. Although this view encouraged content teachers to accept responsibility for content area reading instruction, there was and continues to be resistance to this idea (Artley, 1944; Bintz, 1997; Kamil, 2003; O’Brien & Stewart, 1990; Singer & Donlan, 1980). In a study of the direct instructional approach, Herber (1984) combined reading with
content learning through the development of essential guide materials and concepts with physics students (Vacca, 2002). As well, Herber wrote the first method textbook *Teaching Reading in Content Areas* (1970, 1978) that demonstrated how teachers could teach content and process simultaneously (Alvermann & Phelps, 2002).

**Cognition and Learning Paradigm—1970s and 1980s**

During the 1970s and 1980s the research related to schema theory, text structure, metacognition and strategic learning resulted in the validation of cognitive training approaches or techniques and cognitive strategy instruction. Palincsar and Brown (1984) viewed cognitive training as "one of the most powerful tools of applied cognitive science" (pp. 118-119). This knowledge added new dimensions to teaching and learning with text that were grounded in the cognitive psychological paradigm and led to a shift from the reading and study skills paradigm to the cognition and learning paradigm (Pressley, 2000; Vacca, 2002). These new dimensions began to surface in the fields of reading teacher education and teacher education and became associated with content area reading instructional approaches and strategy instruction during this period (Anders, Hoffman, & Duffy, 2000; Putnam & Borko, 2000; Vacca, 2002).

**Social Constructivist Paradigm—1990s to the Present**

During the 1990s and into the early 2000s there was an ever-increasing body of educational literature and methods textbooks promoting the role of cognitive and metacognitive processes in reading and the use of validated teaching and learning strategies. At the same time, there was a movement by literacy scholars to incorporate constructivists' new theories and practices into teaching and learning in
the classroom. This new perspective supplanted the cognition and learning paradigm associated with content area reading and strategy instruction, and has come to be known as the social constructivist paradigm. In this paradigm, knowledge is considered to be continually under construction, both socially and culturally, and the social context of the classroom is considered to affect the way students interact with the teacher, the text, and with one another. Social constructivists conduct research on issues such as students' and teachers' beliefs about teaching and learning, the connections between reading and talking, and reading and talking to learn, and the role of literature in content study (Vacca, 2002).

Pioneering Times for Reading Research—1900s and 1910s

Early Foundations For Reading Research

Experimental psychologists laid the early foundation for reading research between 1880 and 1910, during the Associationist era (Venezky, 1984). The roots of content area reading have been traced back to the work of experimental psychologists in the early 1900s to 1910s (Vacca, 2000), and content area reading and learning has been a focus in the field of reading education for over one hundred years (Anders & Guzzetti, 1996; Lapp, Flood, & Farnan, 1989; Moore, Readence, & Rickelman, 1983; Singer & Donlan, 1996). As well, educators realized the importance of developing students' reading in content areas during this early period (Anders & Guzzetti, 1996).

During this early stage in the history of reading research there were several firsts. Key figures such as Cattell, Quantz, Dearborn, Huey, and Romanes
conducted research studies and published works that affected the direction of research throughout the twentieth century and into the twenty-first century.

Cattell, the first educational psychologist to conduct research on the reading processes, researched perceptual facets (a) letter and word recognition, (b) legibility of letters, (c) print types, and (d) span of attention (Venezky, 1984). Cattell was also the first to influence eminent researchers such as Quantz, Dodge, Dearborn, Huey, Gates and Thorndike.

Venezky (1984) summarized the early history of reading research, discussing Quantz's first systematic study of the reading process. Followed by Dodge's experiment on eye movement. This was continued by Dearborn's publication of a thorough description of eye movement and the perceptual span during reading. This study of eye movement foreshadowed the stage-by-stage theoretical model of the reading process introduced by Gough (1976). Dearborn and Huey (as cited in, & Moore, Readence and Rickelman, 1983) opened the door for future research with their publications on the psychology of reading. Huey was also a major contributor to the field of educational psychology. He summarized the best thinking of the time about the reading process.

**Reading Comprehension.**

Venezky (1984) reported that Romanes and Huey were the first to draw attention to reading comprehension. Huey (1908) addressed the issue of reading comprehension in the chapter entitled "The Nature of the Perceptual Process in Reading". Romanes was credited with the publication of the first study of reading comprehension, *Mental Evolution of Animals* in which he noted the difference
between recognition and recall in a first and second reading, and attributed this to
the latency of ideas (as cited in Venezky, 1984). Although both Romanes and Huey
addressed the issue of reading comprehension in this early period, it is notable that
the use of the term reading comprehension did not occur until the middle of the 20th
century, and comprehension processes did not become a focus of research until the
1960s. Durkin's (1979) study, *What Classroom Observations Reveal about Reading
Comprehension Instruction*, showed a lack of reading comprehension instruction in
the middle grades. According to Pearson and Fielding (1996), there were no existing
reviews about reading comprehension until the 1980s. This indicates that Durkin's
1979 study on reading comprehension instruction may have struck a chord and
galvanized researchers into action. Stahl (1998) reported that The Center for the
Study of Reading conducted initial research on comprehension that established
principles of how one comprehends, followed by research that developed practical
instructional approaches. Since that time an enormous database of literature and
material on comprehension issues that is critical to the field of content area reading
has been developed). For example, Pearson and Fielding (1996) had a chapter on
comprehension instruction in the *Handbook of Reading Research* that contained
nearly two hundred and fifty references. Comprehension continues to be one of the
most problematic areas in the teaching of both reading and content area reading and
strategy instruction (Biancarosa & Snow, 2004; Block & Pressley, 2003; Duke &
Pearson, 2002; Kamil, 2003; National Reading Panel, 2000; Pearson & Fielding,
Reading Process.

Moore, Readence, & Rickelman (1983) described how Huey and his contemporaries had already examined most of the reading processing problems considered important today by the end of the first decade of the twentieth century. These included research on (a) cues for word recognition, (b) the eye-voice span, (c) the role of peripheral vision in reading memory for connected text, and (d) subvocalization. Reading at this stage in history usually meant oral reading and rote learning. Reading instruction usually meant elocution linked with memorization and recitation of text. Understanding was presumed if the pronunciation was natural.

Since that early period, the study of reading processes has received more research and discussion in the literature than any other facet of education over the last century, and has had a far-reaching impact on the world of reading to this day. In the mid-1960s research on the reading processes became an interdisciplinary quest by linguists, psychologists, sociologists, psycholinguists, sociolinguists, philosophers, political theorists and critical theorists (Pearson & Stephens, 1992). In 1998 Stanovich synthesized twenty-five years of research on the reading processes since the 1970s, and reported that remarkable progress had been made toward understanding the basic physiological processes that underlie the act of reading. As well, in 1992 Chall and Curtis reported that the amount of literature published on reading had grown at a phenomenal rate since 1975.
Content Area Reading Instruction.

During this early period of the twentieth century references to content area reading in the educational literature drew attention to the need for content area reading instruction. In his 1910 text *How We Think*, Dewey emphasized "the need for helping students learn to reason independently" (p. 422), and provided a theory about reflective and instructional practices (as cited in Moore, Readence, & Rickelman, 1983). Huey (1908, 1968) addressed the issue of content area reading in his classic text *The Psychology and Pedagogy of Reading*, noting Francis Parker's admonishment that "reading...should disappear in the study of central subjects" (p. 371). It is notable that Vacca (2002) reiterated Parker and Huey's vision of a functional instructional approach to instruction in his recommendation that "the use of reading strategies should be an invisible dynamic underlying subject matter learning" (p. 184).

In *The Psychology and Pedagogy of Reading*, Huey advocated instruction that would encourage students to read "entire works of real literature" (p. 373), to read in the "central subjects" (p. 371), and "to permit a wide range of extensive reading in the upper grades and high school" (p. 382). Huey also described his vision for adolescent reading, stating "reading and writing will be, in the little school community, just what they are in adult business, they will be the means of doing effectively whatever is to be done" (p. 371).

This body of literature on reading and related research published by experimental psychologists was the beginning of rich lines of research for many disciplines in the early part of the last century. Reading and reading research
became a link to cultural, historical and institutional factors in a number of disciplines. A century later Huey's vision for adolescent readers continues to be promoted.

Summary of Early Foundations of Reading Research 1900s and 1910s

Two milestones occurred during the early part of the twentieth century. One milestone was the work of experimental psychologists who laid the foundation for reading research. The second was educators' recognition of the importance of developing students' reading in the content areas. By the end of the first decade of the twentieth century, Cattell and his colleagues had investigated the reading process and examined most of the reading processing problems considered important today. Huey summarized the thinking of this period in *The Psychology and Pedagogy of Reading* (1908). He addressed the issue of reading comprehension and adolescent literacy, and recommended extensive reading in the upper grades and high school and the reading of authentic texts. All of these topics continue to be literacy issues today.

The Behaviorist Era—1920s to 1960s

The Rise of the Behaviorist Movement

During the 1920s the focus of experimental psychologists on the perceptual process of reading and the mind was diverted to an interest in behaviorism, which led to a major paradigm shift that dominated the field of psychology through to the 1960s. Stanovich (1990) described the resulting lack of attention to reading during this period in a dramatic manner, stating "the behaviorist era led to a decrease in the
type of cognitive theorizing about reading processes that was a central concern in Huey's early work on reading, after Huey there was darkness" (p. 72).

Two events occurred in the field of reading as a result of this shift to the behaviorist perspective. First, the behavioral features and trends in content area reading instruction that were rooted in the behavioral philosophy of learning specified that responses must be sequenced appropriately, made overtly and rewarded. Bruning laid the foundation for the predominantly skill based reading and study skills paradigm (Vacca, 2002) that was associated with content area reading and teacher education in the first part of the century (Anders, Hoffman, & Duffy, 2000). Secondly, this shift opened the door for prominent figures in the world of reading that were proponents of content area reading.

Behaviorist Theory

The following discussion of the theoretical perspective of the behaviorist school of thought, which dominated the field of psychology from the 1920s through to the 1960s, will lay the foundation for understanding the behavioral features and trends in content area reading instruction which are rooted in the behavioral philosophy of learning. Behavioral psychologists viewed learning as a relatively permanent change in behavior associated with the contiguous linking of stimuli, reinforcers and responses. Learning was viewed as a receptive process, and "since mental events such as thought and images and consciousness cannot be observed directly, they have no place in the science of psychology" (Howard, 1983, p. 5). Behavioral psychologists believed that laws of learning were universal; therefore investigations on learning and memory with 'lower organisms' could be extrapolated...
to humans. They also investigated memory, thinking and problem solving with humans using the stimulus response-paradigm (Bruning, Schraw, & Ronning, 1999). This followed the tradition set by Ebbinghaus (1879), the first psychologist to study learning and memory, who was responsible for many methodological contributions (Howard, 1983). Ebbinghaus used nonsense syllables and simple materials in highly controlled settings with research methods such as serial listing learning and paired associate learning. This methodology was based on the belief that it would lead to principles that explained complex learning, memory phenomena and recall of school materials (Bruning, Schraw, & Ronning, 1995, 1999). Research on text comprehension during this period was restricted to readily observable variables such as word frequency and sentence length (Weaver, 1996). This stance had a significant impact on the field of American psychology and on public education. This impact lasted through to the cognitive revolution in the 1950s, and resulted in a lack of attention to reading research.

It is notable that the influence of behaviorism is still reflected in education today. Behavioral features that evolved out of the behavioral philosophy of learning are frequently reflected in a number of educational approaches, including direct instruction, positive reinforcement, classroom management, task analysis and instructional objectives (Bruning, Schraw, & Ronning, 1995, 1999; Jonassen & Land, 2000). Bandura's social learning theory (1977), which emphasized the importance of observing and modeling behaviors, attitudes and emotional reactions, was rooted in behaviorism and spans the cognitive frameworks as well.
Experimental Psychologists' Research and Publication-1920s to 1940s

When experimental psychologists' research perspectives were diverted to an interest in behaviorism, their research interests moved away from the study of the perceptual processes to the study of teaching, diagnosis and assessment. At the same time, in the 1920s to 1930, their research and publications filtered into the world of reading and influenced educators and researchers. Javal was the first to apply the scientific method to the study of the legibility of print, the most ancient line of reading research (as cited in Venezky, 1984), and he put forth a theory of 'compact typography'. It is notable that the issue of typography and legibility was discussed in the literature in the 1990s, and there are ongoing discussions about these topics as they relate to both online and print reading environments. For example, Waller (1996) discussed typographical research and the effects of typographical cueing in text in the chapter “Text and Discourse” in volume two of the Handbook of Reading Research. As well, The British Columbia English Arts 11 and 12 Integrated Resource Package 1996 contains curriculum and prescribed learning outcomes for an English 12 course on technical and professional communication. The topic of typographical variables, as well as many of the content area reading skills in the prescribed learning outcomes, was incorporated into this course. These are examples of educational discourse that began early in the century and continues today. As early as 1922, Judd and Buswell noted, “the reading process varies according to the reader's purpose and the content and difficulty of the material, instigating attention to content reading” (as cited in Anders & Guzzetti, 1996, p. 6).
The diversion to the behaviorist perspective opened the door for educational psychologists, researchers and scholars, as well as for prominent figures in the world of reading and prestigious proponents of content area reading such as Thorndike Gray, Gates and Horn. These scholars were pioneers in promoting the skill based reading and study skills paradigm associated with content area reading (Vacca, 2002). They led the way by influencing colleagues and disseminating a body of literature on content area reading through their research and publications. Reading educators and researchers became increasingly aware of the need for content area reading instruction, which became set apart as a distinct professional area at the elementary school level due to the interconnection and contributions of these influential scholars.

Both Cattell and Thorndike established a psychological basis for mental testing. In 1911, Thorndike founded the Journal of Educational Psychology and published papers on reading comprehension in 1917 that were based on reading scales and tests he had developed. These publications were significant because Thorndike perceived reading comprehension to be an active process akin to problem solving. As noted earlier, in the first decade of the 20th Century reading had usually meant oral reading, and understanding was assumed if pronunciation was natural and correct. Between 1915 and 1920 the emphasis on reading instruction shifted to silent reading, and understanding gained importance. Since Huey's time, researchers have noted that readers impose stress and intonation patterns and experience inner speech during silent reading. Venezky (1984) found that research on reading comprehension remained a neglected area until the 1960s, as attention
was focused on the dominant influence of Ebbinghaus' (1879) study of memory (Venezky, 1984). He also noted that so little attention was given to *comprehension processes* that the phrase reading comprehension was rarely used.

Moore, Readence and Rickleman (1983) discussed early research by Artley, Gray, Horn and McCallister, who investigated the effects of various instructional variables on the acquisition of reading, study skills and learning within each of the content areas. In a survey of grades four, five and six teachers, Gray as early as 1925 identified reading and study skills use in different content areas with their students. In a study with junior high school students, Artley found that students' ability to read generally was related to their ability to read social studies. He also found that teachers resisted the idea that teaching reading was their responsibility.

McCallister investigated the relationship between general reading comprehension and reading comprehension factors specific to social studies, and reported that the numerous kinds of reading activities students performed were dependent on the nature of the subject matter and the teaching strategies appropriate to a particular subject area. Horn's work was significant for several reasons. He initiated some of the first studies that examined ways to enhance learning from text, and published one of the first descriptions of work-type reading. His subject specific textbook *Methods of Instruction in Social Studies* (1937) was groundbreaking because he emphasized the need for "wide reading in the subject areas in order to enhance meaningful learning and accommodate individual differences" (as cited in Moore, Readence, & Rickelman, 1983, p. 425). Conclusions drawn by these investigators suggest that there are skills common to different
subject areas, but some skills have a special relationship to achievement in each subject area.

Gray, Horn and Gates aided in setting reading instruction apart as a distinct professional area, and were key instigators of the emergence of content area reading instruction as an identifiable component (as cited in Moore, Readence, & Rickelman, 1983). Gray provided strong leadership for the recognition of the need for content area reading instruction and was instrumental in disseminating information about reading research for over fifty years. He helped popularize the slogan every teacher a teacher of reading (Moore, Readence, & Rickelman, 1983). Gray also edited two monographs on reading instruction in the content areas and wrote and published several essays that called for educators to focus attention on specific reading skills that were necessary for successful study in content areas (Moore, Readence, & Rickelman, 1983). As well, he was instrumental in developing the landmark report for the 36th Yearbook of the National Society for the Study of Education that was a benchmark because “all teachers were directed to and instructed in how to include reading instruction in their curricula” (as cited in Anders & Guzzetti, 1996, p. 6).

Gates’ contribution to content area reading is posited to be a result of his landmark study on retention in 1917. He supported Gray’s views on the broad concept of reading, noting that “the reading program should.... make careful provision for contributing as fully as possible to the cultivation of a whole array of techniques involved in understanding, thinking, reflecting, imagining, judging, evaluating, analyzing and reasoning” (as cited in Fries, 1962, p. 117). In addition,
Gates and his colleagues either directed or helped extract valuable insights from text dissertations that investigated questions concerning study techniques, comprehension difficulties presented by specific subjects, the value of wide reading for subject matter learning and the relation between reading and scholastic achievement.

By the beginning of the 1930s, and into the 1940s, key figures such as Gray, Herber, Robinson, Bond and Bond, and Strang began to play strategic roles in the development of content area reading and strategy instruction. Innovative reading educators such as these began to make inroads into popularizing content area reading instruction. Bond and Bond and Strang proposed the extension of developmental reading programs that emphasized the continuation of instruction in reading from elementary school through high school for all students (as cited in Anders and Guzzetti, 1996). Bond and Bond published one of the first methods textbooks on developmental reading that underscored the importance of students developing specialized groupings of reading skills in content areas. It is notable that Alexander and Jetton (2000) proposed a similar developmental view of learning that emphasized "the notion that the ability to learn from text changes over the course of one's education (and, presumably, over the remainder of one's life experiences)" (as cited in Kamil, 2003, p. 15).

Summary of Directives for Practice—1920s to 1940s

From the 1920s to the 1940s experimental psychologists' research interests shifted from a focus on perceptual processes to an interest in behaviorism. This shift and the rise of the behaviorist movement (which lasted until the 1960s) opened the
door for educational psychologists, researchers and scholars, as well as for prominent figures in the world of reading and prestigious proponents of content area reading such as Thorndike, Gray, Gates and Horn. These scholars influenced colleagues and disseminated a body of literature on the need for content area reading instruction through their research and publications. Reading educators and researchers became increasingly aware during the 1930s and 1940s of the relationship between reading and learning and of the need for content area reading instruction, and their research laid the foundation for the field (Anders & Guzzetti, 1996). As a result, content area reading was set apart as a distinct professional area at the elementary school level due to the interconnection and contributions of these influential scholars. The relationships between reading and learning became one of the most researched and discussed aspects of the reading field (Dishner & Olson, 1989).

Research on reading in the content areas during this period established that there were unique reading skills in the subject areas that were different than general reading ability, although they were related. This was an echo of the work of McCallister, who had stated in the 1930s “reading practices vary across content areas” (as cited in Anders & Guzzetti, 1996, p. 7), and advised teachers to teach reading and study techniques for each subject. Strang’s research demonstrated that individual patterns of reading varied at the high school level, and Bond (1941) reported a study that showed that reading comprehension in specific subject areas was related to achievement in specific subject areas (as cited in Anders & Guzzetti, 1996). Horn’s work was significant because he initiated some of the first studies that
examined ways to enhance learning from text, and published one of the first descriptions of work-type reading (as cited in Moore, Readence & Ricklemen, 1983).

In retrospect, it was perhaps at this juncture in the 1930s and 1940s that dissension arose between the proponents of the traditional view of content area reading as a skills-specific process in which the reading process was composed of a progression of distinct and measurable skills, and the proponents of a more holistic view that the reading process did not vary across content areas. The question of whether content reading should be viewed generically or in subject-specific terms was a controversial issue. Anders and Guzzetti (1996) pointed out that research during this period appeared to have been conducted to fit this differential skills-specific model of content area reading, and stated "research in content area reading that could be considered contrary to [the differential skills model of content reading] was either interpreted to fit within the popular paradigm in which teachers were advised to teach reading and study techniques for each subject ...or it was disregarded" (p. 8). They supported this claim with Swenson's unpublished study (as cited in Moore, Readence & Rickleman, 1983). Swenson found that reading in the content areas was different but related to general reading skills in each content area. This was essentially a restatement of Judd and Buswell's (as cited in Anders & Guzzetti, 1996, p. 6) belief back in the 1920s that reading processes vary depending on the purpose for reading and the difficulty of the material.

It is worth noting (as cited in Moore, Readence, & Rickelman, 1983) that during this same period the publication of the following three methods textbooks supported this directive. In 1932 McCallister published *Remedial & Corrective*
Instruction on Reading Procedures for Instruction in Content Areas, which was the first reading education textbook that included separate chapters on reading tasks and instructional procedures for particular content areas at the high school level. Strang (1938), in her methods textbook Improvement of Reading in High School and College, and Bond and Bond (1941), in their methods textbook Developmental Reading in High School, advocated a skills-specific model of content area reading because of their belief that “each subject demands specialized and rather highly complicated groupings of reading skills which must be developed in the study of the particular subject” (p. 55 as cited in Moore, Readence, & Rickelman, 1983).

The holistic view of content reading did not gain credence until the reemergence of research in content reading in the 1970s and 1980s. Herber (as cited in Singer & Donlan, 1980) posited that the teachers' role is to guide learners toward independence. He was the first to present reading across the area as a unified process and published the methods textbook Teaching Reading in the Content Areas that was specifically designed to develop teachers' competencies in assisting students in reading content material (Anders & Guzzetti, 1996; Moore, Readence, & Rickelman, 1983).

From Experimental Psychology to the Cognitive Revolution 1900 to the 1950s

In the first half of the 20th century research in reading and related fields, combined with new insights in the field of child development, led to gradual changes in instructional materials and instructional methods. Experimental psychologists had laid the foundation for content area reading around the beginning of the century. With ongoing research, content area reading emerged, developed and expanded as
a specialty in the reading field during this period. Experimental psychologists discussed by Moore, Readence and Ricklemen (1983) used reading to research their interests in perceptual processes. By the end of the first decade of the 20th Century, experimental psychologists had examined most of the reading problems that are considered important today.

During the 1920s, psychologists' attention and interests shifted away from research on the reading process to an interest in behaviorism and research on behavior. Around the same time, reading scholars and researchers such as Thorndike, Gray, Horn and Gates (as cited in Moore, Readence, & Rickelman, 1983) became leaders in the promotion of the need for content area reading and instruction. In the 1930s and 1940s innovative educators such as Strang and Bond and Bond (as cited in Moore, Readence, & Rickelman, 1983) began popularizing content area reading and strategy instruction with the publication of methods textbooks for content area reading instruction at the high school level.

Content area reading and instruction was skill based and consisted of text learning and instructional techniques. Two types of content area reading instructional approaches (locus of instruction) were associated with the reading and study skills paradigm during this period (Vacca, 2002). One type was an explicit direct instructional approach, and the other was a functional approach.
The Cognitive Era—1950s and 1960s

The Rise of the Cognitive Movement

In the 1950s and 1960s there was a resurgence of energy and new ways of thinking in both the academic and educational worlds that resulted in the cognitive revolution and the rise of cognitive science. These changes came about because of several significant watershed events: (a) the development of information processing theory (also known as symbolic cognition) that is central to all cognitive theories; (b) the development of information processing models and approaches; and (c) the advent of the first computers in the 1940s, followed by the commercial availability of computers in the 1950s (Howard, 1983). In the field of reading, significant events included the development of (a) theories of the reading process, (b) schema theory, and (c) metacognition. These events resulted in experimental psychologists shifting their research interests back to the speculation about the inner workings of the mind that had dominated experimental psychology during the first part of the century. This renewed focus led to the cognitive revolution in the 1950s, the rebirth of the cognitive movement in psychology in the 1960s, and a shift to the cognition and learning paradigm in content area reading instruction in the 1970s and 1980s (Vacca, 2002).

The Cognitive Revolution

The shift in the 1950s to what Bruning, Schraw and Ronning (1999) termed the quiet cognitive revolution led to the revival of the cognitive approach to psychology and the cognitive perspective on learning in the 1960s. The goal of this philosophical shift was:
To discover and to describe formally the meanings that human beings created out of their encounters with the world, and then to propose hypotheses about what meaning-making processes were implicated. It focused upon the symbolic activities that human beings employed in constructing and in making sense not only of the world, but also of themselves. Its aim was to prompt psychology to join forces with its sister interpretive disciplines in the humanities and in the social sciences (Bruner, 1990, p. 20).

Cognitive Psychology

Cognitive psychologists' theories and views focus on cognition, memory and motivation. They are relevant because they provide the conceptual basis for the understanding of reading and learning that "formed the bedrock for content literacy practices in academic contexts" (Vacca, 1998, p.xv1). Cognivists perceive learning as a constructive process in which motivation and beliefs direct learning, and the importance of structuring knowledge, self-awareness and self-regulation of cognition is emphasized (Howard, 1983). Learners are portrayed as active processors of information (a metaphor borrowed from the computer world) who assign critical roles to the knowledge and perspectives they bring to their learning (Bruning, Schraw, & Ronning, 1999).

Several overlapping occurrences led to change and the shift away from the behaviorist philosophy on learning, back to the views on reading held during Huey's time. Rumelhart noted, "After many years of dormancy, reading has again become a central concern for many psychologists. It would seem that the advent of the information-processing approach to psychology has given both experimentalists and
theorists paradigms within which to study the reading process" (as cited in Ruddell, Ruddell, & Singer, 1994, p. 864).

One occurrence that led to this change was American psychologists' growing interest in the study of mental processes. Bruning, Schraw, & Ronning (1999) discussed the early work of Bruner, Ausubel, Minsky and Miller, who are credited with creating the cognitive revolution. Pioneer schema theorist Ausubel (1960) emphasized mental structures and organizational frameworks. Minsky (1975) put forth the notion of frames and Bruner and Miller founded the Center for Cognitive Studies at Harvard

Bruning, Schraw, & Ronning (1995) posit a second occurrence was the differing views of linguist Chomsky's and radical behaviorist Skinner's on language learning. Chomsky challenged Skinner's views of verbal learning and his bottom-up theories of syntactic processing as being inadequate explanations of how people acquire and use language. Explaining language development from a behavioral perspective was difficult and became an issue between them after Skinner published Verbal Behavior. Singer and Ruddell's (1985) perception of the issue was that Chomsky's review of Skinner's verbal learning "dealt the death blow to bottom-up theories of syntactic processing" (p. 416).

A third occurrence was a number of advances that brought about lasting change (a) the convergence of psychologists' emerging focus on mind, (b) the birth of the first experimental computers in the 1940s, (c) the availability of commercial computers, and (d) the rise of computer technology in the 1950s (Howard, 1983; Jonassen & Land, 2000). Studies of computers and artificial intelligence "provided a
credible metaphor for human information processing and a significant tool for modeling and exploring human cognition processes" (as cited in Bruning, Schraw, & Ronning 1999, p. 6). These rapid developments in computer science resulted in new ways of testing theories as well as a new analogy for human thought.

A fourth occurrence was American educators’ and the public's discovery during World War II that soldiers were unable to comprehend training manuals and other related materials (Vogt & Shearer, 2003). A fifth occurrence was the Russian launching of Sputnik that resulted in a reassessment of America’s dominance on the world stage. As a result, the 1960s became a time of relative prosperity for education. Political expediency resulted in pressures from the top down and brought about significant funding for research on teaching and experimentation in the schools (Anders, Hoffman, & Duffy, 2002).

This increased funding enabled researchers to conduct research that built upon the foundation for content area reading begun at the turn of the 20th Century. Research on content reading in the 1930s through to the 1960s resulted in the development of a differential skills model of content area reading that was popularized by researchers and authors of methods textbooks.

These overlapping series of seminal events resulted in what Bruner (as cited in Jonassen & Land, 2000, p. 61) described as "cognitive science drifting away from the construction of meaning toward the processing of information, and the shift was metaphor driven". They were significant events for reading researchers, reading educators and learners because they cleared the bottleneck caused by the behaviorist avoidance of mind and resulted in a flood of new and productive
research on the mind (Jonassen & Land, 2000), opening the door to new directions,
new research, new thinking and new and different perspectives on reading, teaching
and learning. Psychologists, who had turned their attention away from the study of
perceptual processes to study behavior during the behaviorist era, resumed their
reading research efforts and began, once again, to devote attention to the analysis
of the mind. This advanced the recognition of the importance of reading, the domain
that psychologists had focused on for the longest time and in the greatest numbers
(Garner, 1994). In addition, research on reading became increasingly
multidisciplinary, and resulted in a proliferation of (a) information processing
theories, (b) models of the reading process, (c) research related to schema theory,
and (d) research related to metacognition. The resulting enormous body of
knowledge about the underlying cognitive processes involved in reading and
learning highlighted the importance of cognitive instruction in the world of reading,
not only because of the importance of reading in all academic areas but also
because of its importance outside of academia. Pressley (2000) reported that the
body of research that supports the role of strategic learning in students’ literacy
development is a convincing one. Biancarosa and Snow (2004) supported this view,
stating “educators now have a powerful array of tools at their disposal. We even
know with a fair degree of certitude which tools work well for which type of struggling
reader” (p. 3). The difficulty, which is an ongoing one, is ensuring that teachers have
the declarative, procedural and conditional knowledge needed to implement these
tools.
Information Processing Theories, Approaches and Models

Information Processing Theories

The development of the information-processing theory in cognitive science, also known as *symbolic cognition*, was significant for both the history of psychology and the history of reading because this theory is central to all cognitive theories. From this perspective "the human mind, like the computer, might be thought of as a general purpose device for manipulating symbols" (Howard, 1983, p. 10), and focuses attention on the "sequence of symbol manipulations that underlies thought" (ibid). The theory is based upon several assumptions about three functionally distinct and permanently built kinds of memory systems in the human information system (a) the sensory registers, (b) working memory, and (c) long-term memory. These three structural components (kinds of memory) are similar to the hardware of a computer, and the control processes that govern the flow of information within the information-processing system are analogous to computer programs (Howard, 1983).

Information Processing Approaches

This information processing approach to learning and memory resulted in a burst of model building and placed cognitive psychology in a position of dominance. It increased interest in human learning, and brought about a corresponding interest in research on reading and learning that had a significant impact on the field of reading education. This approach to learning differs from the behaviorist approach in three ways: (a) knowing is emphasized rather than responding; (b) mental structure and organization is emphasized rather than simple associations; and (c) the
individual is viewed as being an active, constructive, and planful individual rather than a passive recipient of environmental stimulation (Howard, 1983).

**Information Processing Models**

Information-processing models are computer-like models of memory that portray humans as acquiring, storing and retrieving information, and these models are often illustrated with a flow chart or as parallel processes of information (Bruning, Schraw, & Ronning, 1999). Many different kinds and variations of theories and models have been proposed since the initial development of the information-processing theory. In this discussion we will see that assumptions drawn from the information processing theory in relation to theories of the reading process led to the development of schema theory and theories of metacognition. In analyzing these theories it is helpful to bear in mind that the terms theories and models are used interchangeably, although they are not identical. Singer and Ruddell (1985) differentiated between a theory and a model, explaining, "a theory is an explanation for a phenomenon, such as reading. A model is a way of depicting a theory's variables, mechanisms, constructs, and their interrelationships. A theory is dynamic, that is, it describes the way in which a model operates" (p. 620). It is also helpful to think of theories from the perspective of their practicality in that a theory "act(s) as a guide [to] what to pay attention to, what difficulties to expect, and how to approach problems" (as cited in Wenger, 1998, p. 9). Understanding theories and models of the reading process from this perspective brings a depth of understanding that can be generalized to the instructional process.
Theories and Models of the Reading Process

Information-processing theorizing was first applied to reading in the early 1960s when reading research on psychological studies of the mental processes became fashionable once again. In the introduction to the 1968 edition of Huey's 1908 book *The Psychology and Pedagogy of Reading*, Kolers noted that remarkably little empirical evidence had been added to what Huey knew about the experimental evidence and about reading as a psychological process, although some of the phenomena have been measured more successfully.

Many theories about, and explanations of, the nature of the reading process have been proposed since that time. This theorizing has been accompanied by variations in model building that help conceptualize the knowledge and theories, and explain the interrelationship between the variables, constructs and mechanisms of these theories (Bruning, Schraw, & Ronning, 1999).

Researchers conceptualized three groups or types of theories and models of the reading process (a) data driven models, (b) conceptually driven models, and (c) interactive models. Gough (1976, 1985) and LaBerge and Samuels (1985) are the researchers associated in the literature with the early development of the data drive concept. Goodman (1976) is associated with the conceptually driven concept, and Rumelhart (1976) and Ruddell and Speaker (1985) are associated with the interactive concept of reading. These names are only the first of the many whose work on the nature of the reading process continued over the last three decades.

Data driven (bottom-up) perceptual models of the reading process are primarily guided by external stimuli. In this type of model, data flows quickly and
mostly automatically through the information processing system in a series of
 discrete stages, proceeding from the incoming data to high-level encoding. Decoding
 and word meaning is emphasized and it is assumed that the process of translating
 print to meaning begins with the print (Bruning, Schraw, & Ronning, 1999). From this
 perspective, attention is focused on one thing at a time and meaning is primarily in
 the text. Gough's bottom-up processing model is one of the earliest, most well
 known and often reported examples of a data-driven model (Bruning, Schraw, &
 Ronning, 1999; Singer & Ruddell, 1985; Stanovich, 2000). Gough used information-
 processing theory and the findings of eye tracking research on eye movement during
 reading as a starting point to develop his theory and model, which was one of the
 first information processing models of the reading process.

 The conceptually driven (top-down) processing approach is guided by
 frameworks that are stored in memory. This model is called top-down because of the
 belief that higher-level processes interact with and direct the flow of information
 through lower-level processes (Stanovich, 1980). Goodman's (1976) top-down
 processing model of reading comprehension is the most well-known and often
 reported example of a conceptually driven-processing model. It is frequently
 identified as the Psycholinguistic Guessing Game, which grew out of Goodman's
 analysis of the types of reading errors or miscues that children made (as cited in

 Rumelhart's (1985) interactive model of the reading process refers to the
 interaction between the reader, the text and the content. Readers use features of the
 bottom-up and top-down models, prior knowledge and inference as well as the
conventions of print. Alvermann and Phelps (2002) noted that all three models of the reading process (a) data driven, (b) conceptually driven, and (c) interactive are concerned with schema to varying degrees, and stated that they, as well as many educators:

View the interactive model of the reading process as a good descriptor of how students typically read their content area texts. They connect what they know about language, decoding, and vocabulary to their background experiences and prior knowledge. They also take into account the demands of the reading task or the reasons for which they are reading. However, when decoding is not automatic or when insufficient prior knowledge prevents readers from conceptually making sense of print, they resort to a more text-driven model of reading (p. 26).

As well, Ringler, Smith-Burke, & Meyers (1979) placed Rumelhart's view of the interaction between the reader, the text and the content in a larger framework by viewing reading instruction as on-going communication between teachers, learners and text. They framed this theory as being congruent with their (teacher-educators') conceptions of “teachers and learners participating in a dialectic process where both change as a result of their continuing interactions” (p. 228). This view foreshadowed the social constructivists' view on learning and Alvermann's (2001) endorsement of the participatory approaches to instruction.
Theories of Cognitive Instructional Approaches

Cognitive instructional techniques or training approaches, teacher selection and teaching of a sequence of predetermined steps or procedures for a specific use in a specific domain are described by Alvermann and Moore as "teaching strategies that are teacher initiated and content focused" (as cited in Kamil, 2003, p. 5). Ashman and Conway (1997) identified these approaches as "the direct teaching of a range (or repertoire) of specific and general cognitive skills that apply to particular content areas and to a number of learning tasks" (p. 131). Their use of the term cognitive is significant in that it embeds the added dimensions of thinking and mind to the description. For ease of discussion, the term teaching strategies will be used in the discussion of cognitive instructional techniques or approaches and the term learning strategies will be used in the discussion of cognitive strategy instruction or knowledge of cognition. Ashman and Conway (1997) differentiated the ways cognitive instructional approaches or teaching strategies can be used in teaching (a) cognitive strategy instruction, (b) situated cognition, and (c) a dual approach.

Cognitive strategy instruction refers to "the direct teaching of a range of specific and general cognitive skills that apply to a particular content area and to a number of learning tasks" (Ashman & Conway, 1997, p. 131). Learning strategies in isolation can be a problem for students because their automatic use in other content subjects may not occur. Cognitive strategy instruction, or knowledge of cognition, includes three classes of variables (a) knowledge of metacognitive awareness, (b) metacognitive knowledge, and (c) strategy use and is described by Alvermann and
Moore (1991) as "learning strategies that are student directed and intended to build independence in reading" (p. 5).

Situated cognition refers to teaching cognitive strategies as a part of the general learning process. The teaching of the skills and strategies is not explicit. Students are expected to acquire competence (a) through exposure to a wide range of experiences and learning situations, (b) from reinforcement by the teacher, and (c) from exposure to the content (Ashman & Conway, 1997).

A dual approach to strategy instruction refers to a before, during and after sequence of activities. The before phase involves activating prior knowledge by questioning and predicting, the during phase involves confirming or adjusting perceptions of strategy needs, and the after phase involves the integration of the newly acquired strategies into the existing cognitive repertoire of skills (Pressley & Wharton-McDonald, 1970). McGilly (1994) suggested that knowledge of cognitive theory (declarative, procedural and conditional knowledge) should aid students who have the skills and the will to handle learning tasks successfully.

Cognitive training approaches and cognitive strategy instruction differ significantly from the transmission model of instruction and the traditional instructional approaches that are based on textbook reading, lectures, memorization and expository writing. Each approach has its own form, but they share common features, and bring strategic behavior, problem-solving and related concepts into focus. Although there are clear differences between approaches, Ashman and Conway (1997) noted that the ultimate goal of each approach is "to ensure that students and teachers are aware of the student's cognitive and metacognitive
abilities and that these abilities are incorporated into the teaching-learning process" (p 155).

Reevaluation of Theories—1970s and 1980s

During the 1970s and 1980s the research related to schema theory, text structure, metacognition and strategic learning resulted in the validation of cognitive training approaches or techniques and cognitive strategy instruction. Palincsar and Brown (1984) viewed cognitive training as "one of the most powerful tools of applied cognitive science" (pp. 118-119). This knowledge added new dimensions to teaching and learning with text that were grounded in the cognitive psychological paradigm and led to a shift from the reading and study skills paradigm to the cognition and learning paradigm (Pressley, 2002; Vacca, 2002). These new dimensions began to surface in the fields of reading teacher education and teacher education and became associated with content area reading instructional approaches and strategy instruction during this period (Anders, Hoffman, & Duffy, 2000; Putnam & Borko, 2000; Vacca, 2002).

Theories of Schema and Metacognition

Schema Theory

Schema theory, one of the 1970s most popular and influential theoretical models of reading (Anderson and Pearson, 1984; Rumelhart, 1980), refers to the structure of human knowledge as it is represented in memory. The development of schema theory and metacognition theories during this period initiated cognitive theorists' focus on comprehension processes and strategic reading. The phrase 'reading comprehension' was seldom found in the research literature in the first part
of the century, although the term was occasionally used in methods textbooks on reading instruction, or in literature on testing. The concept of cognition in reading comprehension referred to by Huey in 1908 was given little attention until the 1960s. Even then, the publication of Durkin’s (1979) study on reading comprehension instruction showed that there was little instruction on reading comprehension in the middle grades (Alvermann & Moore, 1996). Pearson and Fielding (1996) noted that there were no existing reviews about reading comprehension research until the 1980s. Durkin’s research may have struck a chord and galvanized researchers into action, as an array of research studies on comprehension strategies soon followed.

Schema was not a new concept when Anderson (1984) published the much-cited article *The Role of the Reader’s Schemata in Comprehension, Learning and Memory*, which had a significant influence on the reading field. The concept of schemata, called the building blocks of cognition (Rumelhart, 1982) is incorporated, promoted and explicitly discussed in current reading methods textbooks, as well as in the literature of disciplines such as math, science and social studies.

In reflecting back over the 1950s and 1960s, it is evident that the notion of schema, sometimes referred to as prior knowledge structure, was a key concept in several studies. The notion of schemata appeared in Bartlett’s (1932) work. Bruning, Schraw and Ronning (1999) posited that the reason “schema theory came to the fore so rapidly had to do with its extraordinary explanatory power accounting for memory and other cognitive phenomena” (p. 86). The notion of schemata also played a prominent role in Piaget’s constructivist theory of the ages and stages of human development, and in his research on the stages of children’s mental
processing and accounts of children's cognitive development. By the mid 1970s leading cognitive theorists and researchers, such as Rumelhart, Schank and Abelson, and Winograd, were tremendously interested in this concept.

Information processing theorists such as Minsky (1975), Schank and Abelson (1977) and Rumelhart (1980) incorporated the concept of schema into their work. Later, Bartlett's conceptions and insights about comprehension, which had been given little notice before the cognitive revolution, were adopted in Shank and Abelson's notion of scripts and Minsky's notion of frames. Anderson (1984) had also incorporated Bartlett's work in his notion of the schematic-theoretic view of reading, and in his explanations of the basic modern cognitive theories of comprehension and cognitive processes that take place during reading. Bruning, Schraw and Ronning (1999) posited that the reason this theoretical perspective of schema had been adopted so readily by theorists was because of its "extraordinary explanatory power in accounting for memory and other cognitive phenomena" (p. 56). Schema theory has also been widely accepted as a learning theory by cognitive theorists, psycholinguists and reading educators. They have embraced the hypothesized concepts and the importance of prior knowledge. Singer and Ruddell (1985) stated that the reason for this acceptance is that "schema theory for the first time provides a structure powerful enough to support the interactions among different levels of processing in reading" (p. 405). Vacca (2002) described schema theory and schema activation as the mechanism readers use to access what they know and match it to the information in a text. This concept is now an explicit part of the content on learning from text in reading methods textbooks, which promote the teaching of
reading strategies at the elementary and secondary school levels (Alvermann & Phelps, 2002; Gunning, 2000; McKenna & Robinson, 2002; Ruddell, 1997; Vacca & Vacca, 2002).

In my view, schema theory is accepted because it makes sense to teachers who work with the adolescent population. Teachers are realizing that the knowledge explosion has made it impossible for the students they teach to learn and remember everything they need to know in school in order to be productive and successful adults. Perhaps elementary and secondary school teachers will be more willing to accept the application of schema theory for learning from text as appropriate for instruction if they recognize that students have to learn how to learn from text in each content area, and if they realize that part of their job is to teach students how to learn from text. Singer (1979) suggested that rather than Gray's 1950 slogan that every teacher is a teacher of reading, a more appropriate slogan for high school instructors should be "every teacher teaches students to read and learn from text" (p. 757).

Metacognition

Metacognition, thinking about thinking, is a higher order skill and is viewed as an essential component of skilled learning and reading. Having an awareness of his/her own thinking process (cognition) enables a student to take control of a host of cognitive skills (Baker & Brown, 1984; Bruning, Schraw, & Ronning, 1999). Although the term metacognition was first coined in the 1970s, the concept of metacognitive skills is not new. Pioneer researchers Dewey (1910), Huey (1908) and Thorndike (1917) recognized that reading involved planning, checking and
evaluating one's own understanding. The concept of metacognition gained prominence in the late 1970s as a result of the work of Flavell (as cited in Garner, 1994, p. 715) and his colleagues who described metacognition as "one's own knowledge concerning one's own cognitive processes and products or anything related to them". They also put forth the view that metacognition is the part of our cognition that is in charge of controlling many lower-level cognitive functions such as perception and attention.

As previously stated in the discussion of schema theory, teachers need a clear understanding of cognition and metacognition and an understanding of a number of cognitive and metacognitive strategies in order to be able to analyze the component parts of the strategies and successfully mediate and/or teach strategies for metacognitive control and awareness. As well, they need to be able to provide students with explicit explanations regarding the mental acts of strategy use and stress their value (McGilly, 1994).

Metacognitive Knowledge.

Garner (1994) refined the concept of metacognition further by building upon the distinction made by Flavell in the statement that "metacognition can be differentiated into metacognitive knowledge, metacognitive experience, and one can distinguish between metacognitive and cognitive strategies" (p. 716). Metacognitive knowledge, like other types of knowledge, is assumed to have three components: (a) declarative knowledge, the what of comprehension instruction; (b) procedural knowledge, the how of comprehension instruction; and (c) conditional knowledge, the when and why of comprehension instruction (Baumann & Schmitt, 1987).
**Metacognitive Experience.**

Metacognitive experience includes knowledge about the: (a) tasks; (b) skills; (c) strategies (executive control); and (d) resources needed before, during and after reading. To further illustrate these experiences, Anderson (1980) described the after reading relationship as the 'clicks' and 'clunks' of actual or anticipated cognitive success or failure. Garner (1994) described the before reading experience as 'awareness' or 'personal strength', the during reading experience as 'realizations' and the after reading relationship as the 'ahas'.

**Cognitive strategies.**

Rosenshine and Meister (1997) distinguished cognitive strategies as strategies that help students complete well-structured tasks such as mapping and those that help them complete less-structured tasks such as reading comprehension. Duffy (2003) referred to strategies as the implementation of a plan when reading.

**Executive Processing.**

Garner (1994) also drew attention to the overlapping of metacognition and executive processing. Executive processing is a component found in most models of cognition and in some reading models. Ashman and Conway (1997) described the term executive as "a metaphor for a controlling agent capable of performing an intelligent assessment of the activities occurring within the brain " (p. 47).

As indicated earlier, knowledge of metacognition and metacognitive strategies is not new. Research on cognitive and metacognitive strategies validated in the 1970s and 1980s is very much evident in journal literature. What was new in the last
decade is similar to what has occurred with schema theory. The concepts have been incorporated and discussed in reading methods textbooks at both the elementary and secondary school levels. For example, Vacca and Vacca (2002) have clearly incorporated and simplified the work of Baker and Brown (1984) and Garner (1994), and have explicitly incorporated metacognition into their text as an essential component for strategic learning. They described metacognition as the ability to think about and control our own learning, and they promoted the notion that readers benefit by becoming knowledgeable about the reading process, knowledgeable about monitoring their own reading comprehension and knowledgeable about a variety of reading and learning strategies. However, Stewart and Tei (1983) cautioned that metacognitive ability and strategic learning are related to age and reading ability, and Jetton and Alexander (2000) and Vacca (2002) concurred. Jetton and Alexander pointed out that one’s ability to learn from text does not remain static over the course of one’s education (as cited in Kamil, 2003). Vacca (2002) agreed, stating that “older students are more strategic in their reading and good readers are more likely to use metacognitive processes to self-regulate their use of comprehension strategies to make sense of text than younger and or less proficient readers” (p. 192).

Practices—Cognitive Teaching and Learning Strategies

Several teaching and learning strategies have been proven effective under a variety of conditions and have stood the test of time. These include (a) Directed Reading-Thinking Activity (DR-TA), (b) Anticipation Guide, (c) Graphic Organizers, (d) Guided Reading Procedure (GRP); (e) QAR Relationships, (f) Prep (Prereading
Plan), (g) Think-aloud Procedure, (h) K-W-L and (i) Imagery, as well as teaching strategies such as reciprocal training and metacognitive training.

Palincsar and Brown (1984) reported that in cognitive skills training studies students showed “significant improvement in physics, mathematics and many of the multifaceted skills that underlie reading and studying” (pp. 118-119). Alvermann and Moore (1991) analyzed forty-nine studies on teaching strategies and sixty studies on learning strategies with grades 7 to 12 students and reported that many of the teaching and learning strategies were moderately effective when the conditions of the experimental and actual classrooms matched. Pressley (2000) reported that the body of research that supports the role of strategic learning in students’ literacy development is a convincing one. Kamil (2003) reported that Deshler, Francis, Guthrie, Kamil, and McPartland, five nationally known and respected researchers, agreed “enough is already known about adolescent literacy—both the nature of problems of struggling readers and the types of interventions and approaches to address these needs” (p. 10). Biancarosa and Snow (2004) supported these views, stating “educators now have a powerful array of tools at their disposal and even know with a fair degree of certitude which tools work well for which type of struggling reader” (p. 3).

**Directed Reading-Thinking Activity (DR-TA)**

The Directed Reading-Thinking Activity (DR-TA) (Stauffer, 1969) is based on the view that reading is a thinking process that involves the student's interaction with the text and guided reading. Stauffer explained the steps in the thinking process. First the reader sets a purpose for reading or adopts the purposes of others. Then
the reader speculates about the nature and complexity of the answer(s) reached to test his/her purposes and assumptions. As a result of this process, the reader may either find a literal answer, a partial or implied answer, or will need to either restate his purposes or suspend judgment and continue reading (Singer & Ruddell, 1985). It is clear that the DR-TA procedure for schemata engagement can serve as a lesson framework with logical stopping points, as students are directed through a reading of informational text or narrative materials (Vacca & Vacca, 2002). Teachers are alerted to whether students are engaging their schemata prior to, during and after reading. It is notable that psycholinguist Smith (1994) is a strong proponent of the use of DR-TA.

**Anticipation Guide**

The Anticipation Guide), reported as a favorite prereading strategy, is a series of planned questions and statements that initiate students' thoughts about the contents of the text, and lead them into reading with some personal investment for finding out what is in the text (as cited in Alvermann & Phelps, 2002). The Anticipation Guide was originally referred to by Burmeister (1974) as 'Anticipating and Retrospecting' activities, and by Herber (1978) as a 'Retrospective Prediction Guide'. Lipson (1984) noted that because students' fixed misconceptions in areas such as math and science can be difficult to change, this method can be useful for effecting conceptual change about these misconceptions. Alvermann and Phelps (2002) also endorsed the value and function of anticipation guides in dealing with misconceptions, pointing out that:
By virtue of [their] potential for provoking disagreement and bringing to the surface notions that represent a challenge to students' existing beliefs, anticipation guides serve not only as prior knowledge activators, but also as springboards for modifying strongly held misconceptions about the topic. When students' prior knowledge is inaccurate, [as] is often the case, especially in math and science, confronting their misconceptions directly can be helpful in bringing about new understanding (p. 189).

**Graphic Organizers**

The Graphic Organizer (Barron, 1969), originally called the Structured Overview, is a technique designed to (a) preteach vocabulary in the text, (b) provide an idea framework to show important conceptual relationships between the vocabulary, and (c) help content teachers clarify teaching goals (Tierney & Readence, 2000, 2005; Tierney, Readence, & Dishner, 1980, 1985, 1990, 1995).

**The Guided Reading Procedure (GRP)**

The Guided Reading Procedure (GRP) (Manzo, 1975) is a six step instructional strategy for use with groups or whole classes at the middle grade through college levels. Manzo contended "the GRP enriches skills by having the teacher allow students to see implicit questions, by strengthening determination to concentrate during reading, and by encouraging self-correction and organization of information with minimal teacher direction" (p. 288). However, Manzo recommended the strategy be used no more than once every two weeks. Vacca and Vacca (2002)
also cautioned on its use because it is a highly structured activity. They suggested that the strategy should be used sparingly, perhaps once a week at the most.

**Question-Answer Relationship (QAR)**

Question-Answer Relationship (QAR) (Raphael, 1982, 1984, 1986) is a categorizing activity used with comprehension questions to determine how and from what source the questions are answered. Raphael was among the first to conduct studies on QARs and suggested that strategies for questioning are above the level of factual questions. This postreading activity exemplifies the concept of scaffolding and is frequently used to move beyond lower level thinking such as simple recall, and to encourage higher-level thinking. Just and Carpenter (1985) suggested that questions that require high-level abstraction produce more learning than factual questions. Alvermann and Phelps (2002) posited that high-level questions probably encourage deeper processing and more thorough organization.

Questioning of text information requires a student to reflect and monitor his or her understanding of the text in order to identify important points such as main idea and supporting details. Pressley et al. (1990) recommended training students in question generation because they need to be taught strategies to improve their comprehension. Many students do not look back at the text when they have difficulty answering questions. Raphael (1984) reported that her research findings suggest "the value of QAR instruction lay in the way it clarified how students could approach the task of reading texts and answering questions" (p. 517). She asserted that it helped students realize that they needed to consider both information in the text and
information from their own background knowledge. She also found that students of
different age levels benefited from different amounts and types of instruction.

Raphael is an example of a reading expert and researcher who reached out
through the literature to share her research findings with practicing teachers.
Raphael (1986) reiterated her research findings on four instructional studies that she
conducted and reported on in 1984. She used findings from the 1984 study to
expand the questioning technique so that it begins with two primary sources of
information for answering questions. These two primary sources were in the book
relationships and in my head relationships. She further expanded this technique by
subdividing each category into two question types called Right There and Think and
Search or Putting It Together. It is notable that the graphic that illustrates this
procedure has been cited and replicated in a similar manner in Bainbridge and
Malicky’s (2000) textbook, and the procedure is also recommended in Vacca and
Vacca’s (1999) textbook.

Prereading Plan (PreP)

Prereading Plan (PreP) is a three-phase assessment and instructional
technique (Langer, 1981) that brings together research on the relation between prior
knowledge and reading comprehension. The use of brainstorming in the first phase
(a) provides initial associations with the concept, (b) generates interest in the
reading, and (c) provides an indication of the student’s level of background
knowledge. The second phase, reflections on initial associations, helps students link
associations. The third phase, reformation of knowledge, provides students with an
opportunity to verbalize their associations with the concepts that have been
elaborated or changed during discussion. This technique is useful because it helps teachers (a) foster awareness of a topic, (b) organize information, and (c) engage groups of students in discussion. It is also valuable because it allows teachers to identify (a) students who have much prior knowledge, (b) students who have some prior knowledge, and (c) students who have little background knowledge (Tierney & Readence, 2000, 2005; Vacca & Vacca, 2002).

**Think-aloud Procedure**

Think-alouds voice a reader's internal thought when using a cognitive strategy (Davey, 1983; Stahl & Hayes, 1997; Wade, Buxton, & Kelly, 1999). Davey asserted that "poor readers frequently approach a text as if it were a code to crack rather than a message to be understood—that is, they lack a meaning orientation to print" (p. 44), which also exemplifies the concept of scaffolding. Davey identified five aspects of skilled readers' thinking that poor comprehenders frequently lack. She maintained that poor comprehenders' weak points are (a) failure to form good hypotheses about text meaning before beginning to read, (b) failure to organize information into mental images, (c) failure to utilize prior knowledge, (d) failure to monitor reading, and (e) the lack of active ways to fix-up difficulties. Since Davey's work was first published, think alouds have been used in a variety of ways to improve students' comprehension (Stahl & Hayes, 1997; Vacca & Vacca, 2002). Pressley (2000) reported that he and Peter Afflerbach analyzed and summarized over forty think-aloud studies showing that "the verbal protocols were especially informative about comprehension processes that are conscious and controllable" (p. 550). Think-
alouds can also be used for other purposes, for example Buxton and Kelly used this technique to examine readers' text interest.

**K-W-L**

The K-W-L procedure (Ogle, 1986) involves accessing: (a) 'What I Know', and determining; (b) 'What I Want to Learn', and recalling; and (c) 'What I Did Learn' as a result of reading. This is a simple innovative three step cognitive technique for drawing upon prior knowledge. It is a technique to use with expository material at any grade level, in any subject area, with individual students or in groups. Ogle stated that informal evaluations of teachers' efforts in their teaching with K-W-L were very positive. She noted that teachers piloting studies on K-W-L reported, “when children have questions they are reading to answer, they read noisily—that is, when they come to key sections of the text, they often unconsciously but audibly respond with 'ahs', 'ohs', and 'ums'” (p. 570). This is an example of Garner's (1994) awareness realization.

K-W-L is now termed a strategy or technique instead of a procedure, and has a universal appeal. Huffman (1998) noted that this strategy is a well known one that helps students relate what they know to what they read, hear and view. She also noted that many variants have occurred that emphasize metacognition by adding a fourth 'how we will find out column' to the three column chart. This addition is recommended in the latest textbooks. For example, Bainbridge and Malicky (2000), as cited in Ogle (1986), provided an almost identical K-W-L strategy sheet with the addition of the 'how we will find out column'. Huffman also discussed other adaptations to the K-W-L procedure, such as asking students to indicate how they
felt about reading or brainstorming questions. However, one might wonder if the addition of more and more questions might take away from the effectiveness of this well-known simple technique for developing comprehension.

Laverick (2002), in her role as reading specialist, reached out to high school instructors with a strategy handout sheet (before, during and after steps) she developed for older students to enhance discussion and comprehension. She disguised the K-W-L strategy as a B-D-A-strategy, a new sophisticated strategy with added variations such as Carr and Ogle's (1987) K-W-L-Plus, and Huffman's questioning strategies. Laverick reported that teachers found this form a useful planning sheet as well. These variants are examples of effective ways practicing teachers have developed and implemented reading strategies and practices. Tierney and Readence (1985, 1990, 1995, 2000, 2005) provided examples of new and old practices and strategies that have been developed over the last twenty years by reading scholars, educators and practicing teachers.

Guided Imagery

Samples (1977) is credited with revitalizing interest in mental imagery, which is another dimension of long-term memory, and which behaviorist Watson had viewed as subjective and mentalistic, and therefore unscientific, and had banished from experimental psychology (Bruning, Schraw, & Ronning, 1999). This was a major contribution from the field of cognitive psychology because of man’s extraordinary capabilities for remembering visual information. Pressley (1990) noted “the use of [mental] images in reading has a sound theoretical base in Paivio's dual-coding theory” (p. 50). Paivio hypothesized that imagery should aid reading
comprehension because both a verbal memory code and an imaginable memory code are activated (Bruning, Schraw, & Ronning, 1999). Pressley (1990) and Vacca and Vacca (2002) promoted guided imagery as a viable comprehension technique because it allows students to visualize concepts. They also saw its use as an additional option because it enables students to connect "what they see in their mind's eye to what they will read" (Vacca & Vacca, 2002, p. 201). Guided imagery is recommended as a strategy but is described as mental imagery and used in the Think-aloud Procedure.

**Pioneering Times: New Directions In Teaching And Learning From Text**

In the 1990s there were efforts to reform and restructure curriculum, schools and text use by advocates who held both social constructivist (Bruner, 1986; 1990) and sociohistorical (Vygotsky, 1978) constructivist perspectives about literacy instruction. These efforts were affected by the variables that shape contexts and environments in which students and teachers work, and are reflected in the pedagogical approaches developed, such as the transmission model of instruction and participatory approaches to instruction.

**Transmission Model of Instruction**

The traditional transmission model of instruction that optimizes control has been the dominant pedagogical approach to teaching reading and subject-area content. (as cited in Bean, 1996). Wade and Moje (2000) observed that the role that both the text and the teacher play shows that the transmission approach is a "teacher and content centered approach that transmits a large body of 'authorized' or 'official' knowledge and skills to students...to enable them to be successful in the
meritocratic system that dominates schools and society” (p. 611). Student and teacher discourse is dominated by ‘official texts’ that "establish boundaries as to what skills, topics, authors, and ideologies are considered legitimate and valued—that is what counts as knowledge and as learning" (ibid). Classroom talk is dominated by teacher talk (Alvermann, Young, Weaver, Hinchman, Moore et al., 1996).

Vogt and Shearer (2003) noted that many teachers opt to use the transmission-of-information approach to content instruction that maximizes teacher control and places learners in a passive stance despite the advances in content area teaching strategies. It is also notable that they reported “experienced teachers with a history of learning textbook content in a rote memorization fashion, also tend to teach by covering their content without much regard for critical thinking and critical literacy” (p. 159). This suggests that the influence of the apprenticeship model of teacher education and the effect of the skill and drill method of instruction has had a lasting impact.

**Participatory Approaches to Instruction**

Participatory approaches to subject matter learning, also known as transactional approaches (Jetton & Dole, 2004), are socioculturally focused approaches that researchers acknowledge are linked both cognitively and socioculturally. They engage students in activities aimed at understanding, negotiating and contributing to the classroom, school or local community by drawing on students' social and cultural backgrounds (O'Brien, Stewart, & Moje, 1995). Moll
provided a vivid description of the value of participatory approaches for students and teachers, stating that participatory approaches:

Highlight [adolescents] as active learners, using and applying literacy as a tool for communication and for thinking. The role of the teacher is to enable and guide activities that involve students as thoughtful learners in socially meaningful tasks. Of central concern is how the teacher facilitates the students 'taking over' or appropriating the learning activity (as cited in Wade & Moje, 2000, p. 617).

Participatory approaches to subject matter learning provide students with the use of a wide variety of material that counts as text—printed texts (textbooks, reference books, novels, journals, magazines and comic books), student-generated writing, presentations, electronic text read and generated on the Internet, multimedia (television, radio and film), and visual and performance art. Students are also encouraged to develop an awareness of how they are members of a community of learners. Alvermann (2001) endorsed the use of participatory approaches to teaching, stating "adolescents' evolving expertise in navigating routine school literacy tasks need higher level thinking about what they read and write than is possible with the transmission model of teaching" (p. 20).

Teachers who use the participatory approaches are as concerned with content mastery as are teachers using the transmission model of instruction with the emphasis on skill and drill, teacher centered instruction and passive learning (Alvermann, 2001). The value of the participatory approach is that students become actively engaged in interpreting and integrating new experience based on what they
already know or understand. Texts are treated as tools of learning, and students are constructing new knowledge rather than becoming repositories of temporarily memorized information. As noted earlier, in the social constructivist paradigm associated with content area reading, knowledge is always under construction and the social interaction in the classroom affects “how students interact with the teacher, the text, and with each other” (Vacca, 2002, p. 193).

There are three types of participatory or transactional approaches to subject matter learning (a) reciprocal teaching, (b) transactional strategy instruction, and (c) cognitive coaching.

**Reciprocal Teaching.**

Reciprocal teaching (Palincsar and Brown, 1984) is a teaching approach that uses a repertoire of comprehension-fostering and comprehension-monitoring activities that are grounded in the cognitive psychological paradigm. Reciprocal teaching is a well-researched, well-documented scaffolded approach that applies cognitive research to teaching multiple reading comprehension strategies (Bruer, 1994). The approach, based on Vygotsky's concept (as cited in Ashman & Conway, 1997) of the internalization of cognitive processes, exemplifies the concept of scaffolding. Bruner (1990) is credited with coining the term *scaffolding* in the 1980s. The scaffolding process in teaching or learning contexts provides learners with temporary, adjustable support that enables them to do what they are unable to do at first. The teacher's role is to assist students in developing and extending their skills in the early phases of instruction through a social dialogue with students about segments of the text. Vygotsky (as cited in Rosenshine & Meister, 1997, p. 88)
emphasized the role that instruction plays in this, a child's zone of proximal
development, stating "imitation and instruction play a major role.... therefore, the
only good kind of instruction is that which marches ahead of [the child's]
development and leads it". (Reciprocal teaching is based on dialogue around four
comprehension activities: (a) summarizing, to identify and integrate important
information in the text; (b) question generating, to reinforce the summarizing activity;
(c) clarifying, to draw attention to difficulties with the text; and (d) predicting, to
hypothesize what will be discussed next in the text. The approach is widely used in
many academic areas and in many classrooms around the world (Biancarosa &
Snow, 2004; Meltzer, Smith, & Clark, 2001; NRP, 2000).

Transactional strategy instruction.

The Transactional Strategy Instruction model of reading comprehension
(Pressley & Associates, 1990; Pressley et al., 1992) involves direct explanations,
teacher modeling of strategies, and scaffolded guided practice of strategies on an as
needed basis, along with interpretive discussions of the text with classmates. In
describing the program, Pressley et al. (1992) explained that:

Strategies are pluralized because students are taught to coordinate a
repertoire of strategic processes. The instruction is transactional in two
senses, one following from psychology and the other from reader response
theory. Strategy instruction in reading groups is transactional in the
psychological sense that teachers and students determine the activities of the
group jointly as they interact with text.... this kind of instruction is transactional
in the literary sense because teachers and students jointly construct understanding of the text as they interact with it (pp. 515-516).

Transactional strategy instruction should have a positive effect on students' self regulated cognition for several reasons (a) it provides students with a repertoire of diverse reading strategies, (b) the development of metacognition is encouraged, (c) important non-strategic world knowledge should increase, and (d) building student motivation is a high priority. This approach can be refined to meet students' diverse abilities, backgrounds and needs at all grade levels. Successful adaptations of this approach were reported by Bergman (1992), who worked with low achieving students at the elementary school level, and by Casteel, Isom, and Jordan (2000), who worked with students in grades four to twelve.

**Cognitive coaching.**

Cognitive coaching is a concept that is supported by principles of adult learning. It is notable that these same principles are now being adapted to children's learning in grades K to 12. This method of instruction is based on the theory that metacognition provides personal insights into one's own thinking, and also builds flexible, confident problem solvers, encourages self-efficacy and pride and leads to independence in learning. A teacher's role in this approach changes and becomes that of a learning coach rather than a knowledge teller. Vacca and Vacca (2002) stated, "when teachers assume the role of coach, they make explicit what good readers do to cope with the kinds of comprehension problems they encounter in academic texts" (p. 351).
Cognitive coaching is a good fit for comprehension instruction because it encompasses explicit explanation, modeling, dialogues, scaffolding, practice, application and encouragement (Ashman & Conway, 1997). This provides opportunities for co-operation between student and teacher because they both have a common goal. Ongoing assessment and immediate feedback results in the use of the scaffolded instruction technique, which includes predicting, questioning, clarifying, summarizing, self-appraisal and adjustment to task difficulty. Teachers benefit from this mutual regulation because they can observe students' misconceptions and their strategy use. As well, students can learn from their instructor's sharing of experiences using the strategies (ibid).

Summary of the Reexamination of Theory 1970s and 1980s

Cognitive science provided the theoretical basis for effective content area reading and strategy instruction to meet the needs and abilities of a broad range of students. The evolution of information processing theory and the development of theories and models of the reading process provided a large body of knowledge about the nature of the reading process. This knowledge, together with the concepts of schema theory, cognitive theory and metacognitive theory, led to the development and validation of teaching and learning strategies grounded in metacognitive and cognitive principles. These training approaches and cognitive strategies focus on guiding students' comprehension of text in order to improve their learning and reading skills and knowledge. Many authors have incorporated several of these validated instructional approaches and strategies into their reading and methods textbooks. From a psychological perspective, we have the knowledge and the
materials to help adolescents become strategic readers. Nevertheless, adolescent literacy continues to be an issue. Decades after the cognitive revolution in the 1950s and the rise of the field of cognitive science in the 1960s there was a shift in the interests of researchers and educators, from the cognitive philosophy and validated practices used in the cognition and learning paradigm associated with content area reading and strategy instruction to the social constructivism paradigm in the 1990s.

**Constructivist Era—1990s and into the future**

**Constructivist Movement**

Constructivism is a catchall term for a theory or a collection of theories about how individuals fashion or construct knowledge (Alvermann & Phelps, 2002; Hruby, 2001). Confusion may arise over the use of the terms constructivism and constructionism. The term constructionism is occasionally used in educational literature (Gavelek and Raphael, 1996), and is beginning to be used extensively at literacy conferences, around graduate seminar tables, and in informal discussions between literacy researchers and theorists (Hruby, 2001). Hruby differentiated between the two terms by defining constructivism as a psychological description of knowledge and constructionism as a sociological description of knowledge. He pointed out that "what constructionism means, or should mean, in literacy research, and whether it is of any value in the field, is not at all clear" (p. 51).

Vacca and Vacca (2002) described the way constructivists view learning as "the learner's process of constructing knowledge and personal meaning from new experiences" (p. 402), and asserted that this view has implications for teaching and learning and for professional development. Literacy educators differentiate between
four versions of constructivism (a) cognitive, (b) radical, (c) social and (d) sociohistorical. These differentiations help in understanding the issues and new ways of viewing teaching, learners and the learning process in the shift to the social constructivist paradigm associated with content area reading instruction in the 1990s (Vacca, 2002).

**Rise of Social Constructivist Theory**

**Cognitive constructivism.**

Cognitive constructivism views cognitive development as an individual's ability to assimilate and accommodate new information with existing background knowledge. External evidence is needed to show that learning has taken place. Radical constructivism situates motivation for learning in the person and in the content to be learned, but differs from cognitive constructivism in that external evidence is not needed to show that learning has taken or is taking place. Both of these versions of constructivism are concerned with learning that builds upon an understanding of the world inside the head; that is, it is internal and personal (Alvermann & Phelps; Au, 1997). Sociohistorical constructivism is associated with Vygotsky's (1978) activity theory. Social constructivism is associated with Bruner's (1990) recent work. Both of these forms of constructivism are concerned with social and interpersonal factors such as the culture of a classroom, the structural characteristics of schooling and issues of social justice that build upon an understanding of the world outside the head.
Sociocultural approach.

The sociocultural approach to literacy instruction is grounded in theories of both social constructivism and sociohistorical constructivism. The term sociohistorical is sometimes used in place of the term sociocultural because it embraces Vygotsky's (1978) theoretical stance. The use of either term is appropriate because social, cultural and historical factors all play a part in this school of thought. However, the term sociocultural will be used in this dissertation as it is grounded in both theories of social constructivism and sociohistorical constructivism. Sociocultural is the term frequently used by scholars, researchers and practitioners in the reading educational community's discourse. For example, Vogt and Shearer's (2003) publication *Reading Specialists in the Real World* provides a sociocultural view of the evolving and emerging roles of the reading specialist.

Social constructivism.

In the 1990s the interests of sociologically minded scholars, researchers and educators began to influence content area literacy teaching and learning practice in the content areas. This brought about a shift away from the cognitive philosophy, strategy validated studies and content area reading practices of the 1970s and 1980s, and a move towards social constructivism (Au, 1997) and constructivist research. This led to a social constructivist paradigm associated with content area reading and strategy instruction (Bean, 2000; Bean, 2001; Cambourne, 2002; Vacca, 2002; Vogt & Shearer, 2003) and a renewed focus on adolescent literacy (Biancarosa & Snow, 2004; Carnegie Corporation of New York (2006; Meltzer, Smith & Clark, 2001).
Social constructivist theorists view teachers' and students' experiences within the classroom environment to be at the forefront of teaching and learning (Bean, 2000; Vacca, 2002). The classroom environment is viewed as "complex, hegemonic contexts where participants negotiate multiple discourses with varying degrees of success" (Hinchman & Moje, 1998, as cited in Bean, 2000, p. 631). Vacca (2002) described the social constructivist paradigm as one where knowledge is always under construction. Students' interaction with the teacher, the text and each other is affected by social contexts within the classroom. The concept of learning with text, an extension of the cognitive notion of learning from text, suggests that a transaction occurs between reader and text. Students contribute to their own learning, negotiate meaning and socially construct knowledge through discussion and writing.

This shift to the social constructivist approaches to research and content area reading instruction may be occurring for a number of reasons. One reason may be that when researchers attempted to introduce the concepts of schema theory, metacognition and strategic learning to authentic classroom tasks, it led to the realization that factors that influence learning, and support or inhibit intelligent behavior, are not always emphasized in the cognitive research on problem solving (Bruer, 1994). In other words, the reality of the learning situation in the classroom varies significantly from contexts in which individual cognitive processes are studied, such as in research laboratories, under controlled learning conditions.

Another reason may be that new conceptualizations about reading, along with new insights and views, are continuing to be expounded by two interdisciplinary groups of scholars, The New Literacy Studies Group (1990) and The New London
Group (1996). The New Literacy Studies Group asserted that text interpretation is rarely the same for different individuals reading in different contexts (Gee, 2000; Street, 1997; Willinsky, 1990). The New London Group (as cited in Bean, Bean & Bean, 1999) reappraised literacy from the sociocultural perspective, and suggested that literacy practices in schools needed to be transformed through a curriculum of critique, broadening of the literary canon and recognizing the role of multiple languages and literacies in adolescents' lives.

The Complexities of the Adolescent Population

In this second section of the literature review the complexities of the adolescent population are discussed, and there is a description of the terms culture and ethnicity and social class and status, and how they are perceived in the literature. This is followed by a discussion of adolescents' age, reading ability and gender differences, the affective nature of their reading, assessment results, and student self-efficacy and student agency.

Communities of practice in Canadian schools are characterized by a culturally, linguistically, and academically diverse student population. In British Columbia's secondary schools the adolescent population is a community of learners with culturally diverse religious, ethnic, and linguistic backgrounds, and a wide range of values, needs, capabilities and interests. My experience in working with this type of population has been that teachers are concerned about and sensitive to this diversity, and to the sociocultural factors such as differences in race, ethnicity, language backgrounds, family structures and socioeconomic classes that are represented. A major reason for this diversity is the increasing number of immigrants...
who have arrived in Canada. For example, in 1996, for the first time since 1912, more than 50,000 immigrants landed in Canada in one year. British Columbia was the second most popular destination for immigrants after Ontario (BC Stats, 1997). In 2003, the number of arrivals in BC alone rose to over 35,000.

Culture and Ethnicity

Culture and ethnicity are discussed in the literature from a sociocultural perspective as being both "a relatively stable, integrated whole encompassing a people's knowledge, beliefs, and ways of life (ethnicity), and an active process of change, growth, and development" (Au, 1997, p. 182). Teachers and students encounter both of these views of culture in Canadian school settings daily. In the past, in both Canada and the United States, diverse cultural, ethnic, and linguistic groups adopted mainstream values and behaviors, and became absorbed into the majority culture. They became culturally literate, that is knowledgeable about the arts, literature, and other determinants of the culture. However, attitudes are now changing. The melting pot tradition that was once characteristic of the immigrant population is shifting. Students today are more inclined to lean toward a 'salad bowl' mixture in which they celebrate their differences and retain the language, attitudes, and values of the group with which that identify (Ruddell, 1997). It is notable that synonyms such as indigenous, native and national are frequently used in reference to an individual or group ethnicity.

Social Class and Status

The concepts of social class and social status may reflect how students are evaluated by their peers and by adults. Sociologists differentiate between these two
concepts. Social class refers to "position in the market place, usually based on the kinds of jobs and industries of person's work" (Featherman & Spenner, 1988, p. 70). Status refers to elements such as prestige or standing in the community, based on gender, race, ethnicity, and a family's reputation. Status also reflects standards or tastes for life style and consumption, that is, how persons and families spend the money and leisure time they have (Featherman & Spenner, 1988; Klaczynski, 1991).

**Adolescent Profile**

**Age.**

The age of adolescence is a complex transition period in human development that is positioned between the child psychologists' perspective and the life-span developmental psychologists' perspective. Until recently, child psychologists had viewed the first decade of a child's life as the most important, formative and rapid period of development (as cited in Hetherington & Baltes, 1988). The focus of life-span developmental psychologists has been on the study of adult development and aging, and more recently on adolescence, and "their perspective is associated with a theoretical conception of the life course as involving an integration of changes among variables from biological through sociocultural and historical levels of analysis" (ibid, p. xiii). Life-span proponents assert that events and changes occurring after childhood and through the adult years have equally powerful effects on the direction and rate of human development (Hetherington & Baltes, 1988). Recently, both fields have begun to focus on adolescence and draw on scholars' work from multidisciplinary fields such as biology, sociology, anthropology, psychology and education. This recent attention and focus on adolescents'
developmental characteristics and needs by life-span advocates, scholars and child and developmental psychologists, together with the emphasis on the sociocultural and historical contexts, is becoming increasingly evident in the literature.

Early adolescence (ages 10 to 15) is a critical stage in the biological, cognitive and socioemotional development of a young person's transition to adulthood. Davidson and Koppenhaver (1993) noted that early adolescence is "the only time in the human life cycle when the growth rate accelerates" (p. 13), and pointed out that "these physical, cognitive, and linguistic changes occur at the same time that young people experience social and emotional changes" (p. 16). Western psychologists, sociologists and anthropologists suggested, "adolescence is a time of changes marked by a plague of problems...which may be inside or outside.... these changes impact adolescents' sense of self in many ways, including the sense of self [they] bring to school, their social sense of self and their academic sense of self" (as cited in Mosenthal, 1998, p. 327).

Chronological age is often a poor indicator of students' physical maturity or reading ability. Students of the same chronological age may differ as much as six to eight years in physical maturity. For example, developmental growth may be very different for individual students between grades 4 and 7 and grades 8 and 9. The acknowledgment of these factors is critical because there are such wide variations in the onset of the growth spurt. Chronological concepts are not applicable to students' literacy development (NICHD, 2002) because literacy development is an ongoing process that occurs over time. O'Flahavan and Seidl (1997) posited that from a sociocultural perspective, "literacy development begins with the assumption that a
literate action is mediated and cannot be separated from the milieu in which it is carried out" (p. 201). Thus two significant periods on the trajectory of students' development are the transition from elementary school to grades 8, 9 and 10, and the transition to grades 11 and 12 (Green, 1998; NICHD, 2000). In addition, there are many variations in factors such as students' self-efficacy, sense of agency, autonomy, initiative and self-determination, as well as in their physical, cognitive and linguistic development.

**Reading ability.**

The range of differences in students' reading achievement increases steadily as they progress through the grades. One general rule of thumb advocated by Burmeister (1974) that illustrates the disparity between reading achievement and age is the third to third to third rule. In this rule, approximately one-third of the students will read within one or two years of grade level, one-third will read more poorly and one-third will read better. A second view is that the spread from high to low achiever frequently is one and one-half to twice the number of the grade level (Goodlad, 1966). Hence, in the fifth grade there is frequently an eight-year spread in reading achievement between the best and the poorest readers (Burmeister, 1974).

Students who have difficulty with reading and understanding subject area texts are at risk of academic failure, a danger that Stanovich (2000) discussed in his famous paper on the 'Matthew effects' in reading. Schoenbach, Greenleaf, Cziko and Hurwitz, (1999) called this difficulty with reading and understanding subject area texts, sometimes referred to as *gatekeeper texts*, as hitting the literacy ceiling, "a ceiling that limits what students can hope to achieve both in the classroom and in
their lives out of school" (p. 5). They may be engaging in a vicious cycle in their life-span development, a cycle in which failure may make them hesitant to try. What appear to be challenges to others may be perceived as threats to struggling readers. This in turn may cause students to become passive, helpless participants in what is fundamentally an interactive process (Johnston & Winograd, 1985), and lead to preoccupation with defense of small claims on life at the expense of energies to invest in constructive learning and coping. This type of vulnerable student may fall increasingly behind in acquiring the knowledge and skills that are needed for success when they do try, putting them in the adolescent population who is in danger of school failure and of dropping out of school.

Results on the National Assessment of Educational Progress's (NAEP) 1998 Reading Report Card for the Nation and the States indicated that while most students can read at a basic level, many "cannot read and comprehend the types of higher-level texts essential to an individual's success in an information-based economy" (as cited in Schoenbach, Greenleaf, Cziko & Hurwitz, 1999, p.4). One framework that examines difficulties struggling English language learners (ELL's) and monolingual adolescents face is the culture-as-disability perspective supported by anthropologists McDermott and Varenne (1995) and the New London Group. This perspective is based on the assumption that "all cultures, as historically evolved ways of doing life teach people about what is worth working for, how to succeed, and who will fall short" (Alvermann, 2001, p. 9) Proponents of this perspective assert that skills instruction for struggling adolescent readers is insufficient, and Alvermann (2001) stated:
What is needed is greater access to teachers who understand the manner in which schools promote certain normative ways of reading texts is, in effect, disabling some of the very students deemed most in need of help. Society (for the problem does not lie solely with schools) is seen as making struggling readers out of some adolescent who for any number of reasons have turned their backs on school literacy (p. 9).

**Gender differences**


Throughout the twentieth century numerous issues have been debated about the gender gap and students’ educational achievement. Contentious discussions but little consensus have occurred over reasons for the gender gap: (a) classroom dynamics—students’ and teachers’ gender interactions in the classroom (Morin, 2006; Sanford, 2005/2006); (b) feminized school environments (Brozo, 2005); (c) the effects of expectation (Rosenthal & Jacobson, 1992; Sanford, 2006); and (d) gender equity and schooling (Coulter, 1996). Smith and Wilhelm (2002) reported that gender studies have shown:

Boys will go to great lengths to establish themselves as “not female” and follow what their peer group establishes as gender specific behavior. This is particularly true of the activities that involve effort and the chance of failure, for incompetence and expanding effort are also seen as unmasculine (p. 13).
In an ethnographic case study conducted over a two-year period on boys reading interests, Blair and Sanford (2004) posited that there is evidence that boys are becoming literate in many ways through out-of-school activities, and girls are not engaging in the same activities. They found that "boys can read, but are selective in what they read.... and are transforming [morphing] their literacy practices to better meet the needs in a demanding and rapidly changing world" (p. 459). Blair and Sanford (2004) described the term *morphing literacy* as the distinct characteristics of literacy practices and behaviours males use in and outside of school.

Results from two international studies indicate that the gender gap in academic reading is universal among countries assessed. In the International Studies of Educational Achievement (IEA) (1994), study, results showed that of fourteen-year-old students' self-rating of their reading ability and reading achievement by gender, on average, girls rated themselves as better readers than boys. Girls also scored higher than boys in the three specific domains tested—narrative prose, expository prose and documents. Results from the study also showed that girls appear to have a higher degree of self-confidence in their ability to read than boys. Although not differentiated by gender, the survey found that in British Columbia 44% of the students rated their reading as very good, 36% rated themselves as good, 14% rated themselves as average and only 7% rated their reading as not very good. Elley (1994) suggested that in future studies the voluntary reading patterns of this type of population should be analyzed by gender to assess the universality of popular themes in their gender relatedness.
In the PISA 2000 study a summary of fifteen year olds' gender differences showed that (a) females tend to express greater interest in reading than males, (b) males tend to express greater interest in mathematics than females, (c) subject interest differs consistently between genders and is closely interrelated with learning outcomes in the respective domains, (d) males' engagement with reading beyond what is required of them is limited, and (e) males spend much less time reading for enjoyment than females.

Findings from these assessments suggest that differing reading habits of females and males may have far-reaching consequences for learning that need to be addressed if gender equality is to be achieved. Millard (as cited in Smith and Wilhelm, 2004) posited that boys are disadvantaged in academic literacy as a result of curricular emphasis, teacher text and topic choices, and lack of availability of texts that match their interests and needs. Brozo (2006) made three key recommendations to address this issue (a) find ways to bridge the competencies that boys have outside of school with the skills they need to handle academic tasks, (b) match materials to boys interests outside of school, and (c) find men in community to serve as reading mentors for boys.

The issue of meeting both genders' adolescent literacy needs has been the topic of Canadian research studies (Blair and Sanford, 2004; Gambell and Hunter, 2000; Liam, 2005). In an examination of results of Canadian assessments of school literacy, Gambell and Hunter (2000) suggested five reasons for female superiority in literacy test results (a) division of family labour, (b) character-personification, (c) classroom interaction, (d) assessment bias, and (e) identification with gender.
The topic of gender has received increasing attention and is a contentious issue in the educational literature. Since 1997 the IRA has published an annual What's Hot What's Not? survey of the views of 25 literacy leaders on key literacy topics (as cited in Cassidy, Garett, and Varrera 1V, 2006). The issue of gender literacy was first mentioned in this survey in 2002/2003, however, at that time it was rated "not hot" and "should not be hot" (Cassidy, Garcia & Boggs, 2005). The following year, gender issues in literacy was rated one of the coldest topics (Cassidy & Cassidy, 2003/2004). Two years later, in the 2005/2006 issue, gender issues in literacy was rated a hot topic (Cassidy & Cassidy, 2004/2005), although the literacy leaders continued to indicate that it "should not be a hot topic".

**Student agency.**

Student agency involves notions of individual decision making, calling attention to the choices individuals make, and promoting considerations of self-direction more than other direction. School is one environment where adolescents’ agency can most easily be seen to predominate (James & Prout, 1996). In traditional socialization theory, a finite model of agency (intentions, deliberate purposive actions and reflexivity) posits that the child at home, in the street and at school is the same child in all respects. By the 1990s, sociological studies on the attributes of agency to adolescents moved from being a study of passive individuals structured by the social context of the family or the school to the study of adolescents’ active participation in the structuring. This shift from structure to agency emphasized individual’s multiple experiences of the self through engagement with different people in different social groups (James & Prout, 1997).
In classroom contexts, “agency pertains to individual’s autonomy to choose their actions toward self-determined goals” (as cited in Vogt & Shearer, 2003, p. 164). Student agency and the social context that shapes and is shaped by literacy learning in secondary school classrooms are uniquely complex. As students move from subject class to subject class, through different social communities of learning that have their own characteristics and their own instructional value systems, they experience *multi-subjective sets of selves* (James & Prout, 1997). This promotes the development of multiple classroom cultures or subcultures that are defined by teachers’ and students’ differing beliefs, philosophies, experiences and emotions, as well as differing values and attitudes (Moje, 1996). This enables adolescents to learn about, and come to grips with, the very differently structured environments, and with the different hierarchies and characteristics they encounter in their everyday lives inside and outside of school (James & Prout, 1997). In our Western culture, the school provides one of the main contexts within which adolescents' informal peer culture flourishes.

Moore and Cunningham (1998) brought the issue of agency to the forefront in a comprehensive discussion of agency and adolescent literacy that encompassed the dialogic theory of agency, a broad area that warrants consideration.

**Teacher Education and Teacher Research.**

In this final section of the literature review there is an examination of (a) paradigm shifts in teacher education and reading teacher education programs, particularly since the 1960s, (b) teacher resistance and barriers to implementing content area reading instruction into content areas, and (c) teachers’ and reading
teachers' changing roles in helping students become academically successful.

This discussion will be followed by a discussion of research studies on novice and practicing teachers' involvement with content area reading and strategy instruction.

Paradigm Shifts in Teacher Education

Teacher education and reading teacher education was impacted by the same pedagogical influences, theories and practices that have resulted in trends and changes that impacted the field of content area reading during the last century. These changes in pedagogical thought occurred in teacher education and reading teacher education in three phases (a) from about 1900 through to the 1960s, (b) from the 1960s to the early 1980s, and (c) from the mid 1980s through the 1990s (Anders, Hoffman, & Duffy, 2002).

The skill based apprenticeship model of teacher education was the central instructional method of education from the 1900s to the 1960s. The emphasis was on what teachers, as apprentices, should learn in their course work and from their mentors. Wellman and Wold (2006) observed that literacy courses did not exist in the 1950s, and university-based teaching provided future literacy teachers with insufficient training.

From the 1960s through to the early 1980s the trend in teacher education research followed general trends in cognitive psychology, moving away from the view of knowledge as static to focus more on mental constructs, theoretical orientations and beliefs about reading (Anders, Hoffman, & Duffy, 2002). This was a shift away from the emphasis on apprenticeship toward helping teachers improve their knowledge base about both content and methods, and the application of this
knowledge (ibid). Historically, subject teachers and reading teachers received little training in the teaching of reading prior to working with students in their classrooms (Lenski, 2006). Shulman (1986) voiced the opinion that the state of both reading teacher education and teacher education during this period “seemed to be based on the view that teacher candidates will teach effectively once they have acquired subject matter knowledge, become acquainted with models of innovative curriculum, and have practiced using them” (p. 8).

In the mid-1980s through the 1990s, reform movements in research communities and education raised issues about teacher learning and the connection between “formal, theoretical and abstract knowledge and informal, personal and practical knowledge of reflective practitioners” (Anders, Hoffman, & Duffy, 2002, p. 720). These new ideas about the nature of knowledge, thinking, and learning, termed the situated perspective, resulted in a new paradigm shift and the introduction of terms like situated cognition, distributed cognition, and communities of practice (Putnam, & Borko, 2000). This new perspective is evidenced in the sociocultural underpinnings of teaching and learning in the classroom (Vacca, 2002) and the shift to the social constructivist paradigm that has had an influence on content area reading and strategy instruction (Bean, 2000).

**Changing Agendas and Roles in Content Area Reading Instruction**

During the last century these changes and trends have resulted in separate roles and agendas for theorists, researchers, reading scholars and educators, reading teachers and teachers with content area specialties. Theorists and researchers focused their research on reading processes and conducted studies to
test their inferences and theories (Anders, Hoffman, & Duffy, 2002). Scholars and reading educators such as Huey, Gray, Herber, Robinson, Singer and Donlan, Smith, Tierney, Alvermann, Vacca, Readence and Bean promoted the importance of reading and content area reading and strategy instruction. Tierney & Cunningham (1984) advised that students' learning would improve if teachers used effective research based practices properly. Santa (2006) supported this view, and stated, “researchers know the problems facing struggling adolescent readers and have identified intervention approaches to address these needs” (p. 466).

In Reading Next: A vision for action and research in middle and high school literacy, Biancarosa and Snow (2004) called for content teachers to include direct instruction as part of their day-to-day content instruction, and for interdisciplinary teams to meet on a regular basis to provide opportunities for content teachers to include direct explicit comprehension.

The focus of teachers with content area specialties has traditionally been their subject knowledge base and their application of knowledge about both content and methods. However, it is noteworthy that the Carnegie Corporation of New York (2006) published a collaboration between the International Association of Reading (IRA), the National Council of Teachers of English (NCTE), the National Council of Teachers of Mathematics (NCTM), the National Science Teachers’ Association (NSTA) and the National Council for Social Studies (NCSS) on Standards for Middle and High School Literacy Coaches. The purpose of these standards was to complement the IRA’s 2003 (2004) Standards for Reading Professionals, and to “specify what literacy coaches must know and be able to do to function effectively to
train faculty literacy techniques" (as cited in Carnegie Corporation of New York, 2006, p. 3). This publication represents a historic moment in the history of content area reading because it signals a coming together of English, Mathematics, Science and Social Studies teachers. It is hoped that teachers' recognition and acceptance that showing students how to use reading strategies will not diminish the content area teachers' role as a subject area specialist (Vacca, 2002), and that this recognition and acceptance will overcome barriers and resistance to content reading instruction.

**Resistance to Content Area Reading Instruction**

Historically, secondary school teachers have been reluctant to accept what theory and research has to say about meeting students' literacy needs to help them become strategic readers, and they have been resistant to accepting teaching reading as part of their role. Gray's call in the literature of the 1930s for 'every teacher to be a teacher of reading' was "originally intended as a call for action for subject specialists" (O'Brien and Stewart, 1990, p. 102).

The complex problem of barriers and middle and secondary school teachers' resistance to content area reading and strategy instruction has been a recurring theme in research and in the educational literature (Bintz, 1997). This is evident the tensions between educators who adhere to theory and those who adhere to practical aspects of teaching (Wellman & Wold, 2006). Kamil (2003) contended:

For much of the history of reading in [the US] the attitudes of middle and high school teachers has been that their job was not to teach reading. They view themselves as content specialists and believe that the job of teaching reading
belongs to elementary school teachers. And they feel that, if only those elementary school teachers would do a better job of teaching students to read, the problems at the secondary level would be solved. But for decades reading educator experts have disagreed with this analysis (p. 4).

Numerous authors have expounded upon reasons for the barriers and resistance to content reading instruction by content teachers. In a qualitative study O'Brien and Stewart (1990) analyzed the perspective on content reading of 250 pre-service teachers who were attending a content reading course. The authors found that teacher educators had to overcome their students' resistance, clear up their students' misconceptions and alter their students' attitudes towards content area reading and strategy instruction.

O'Brien and Stewart (1990) found that pre-service teachers are often resistant to tenets and pedagogy associated with content reading courses, even before they have attended content reading courses, and are often resistant to the recommended tenets and pedagogy in the courses which may be incompatible with their perceptions of the importance of reading and texts in their respective disciplines.

Pre-service teachers hold misconceptions about the locus of instruction, confusing reading-to-learn with learning-to-read, which they place outside of the classroom for delivery by reading specialist or other teachers. Reading is perceived as the mastery of basic skills in the early grades, and once learned the skills are perceived to be applicable to a variety of reading demands in content classrooms.

Assumptions about teaching, learning and school life are deeply rooted beliefs about teachers' roles and the traditions of content disciplines that contradict
the tenets and pedagogy of content reading courses. As well, stereotyping exists in that elementary school teachers are viewed as child-oriented whereas secondary school teachers are viewed as content-oriented.

Nourie and Lenski (1998) conducted two surveys with more than two hundred pre-service secondary school teachers who had attended required content literacy courses. The authors examined how receptive pre-service teachers were to learning literacy strategies and techniques for their specific disciplines. Findings from the first survey on pre-service teachers' attitudes toward reading showed that the majority of the pre-service teachers tended to value reading. The second survey of attitudes to teaching content reading in content classrooms showed that 60% of the future teachers believed that knowing how to teach reading should be required for a secondary teaching certificate. Thirty-three percent of these pre-service teachers indicated that English teachers alone should be responsible for teaching reading in secondary schools. Only 22% agreed that content teachers should leave reading instruction to reading teachers. The authors concluded from this study that the students' personal reading attitudes would not be a roadblock to their teaching reading strategies.

Nourie and Lenski's (1998) results are significant, although the number of subjects in these studies was not large. Their results suggested that there is hope for increased success in working with teachers in content literacy methods classes. Their results also reveal the dichotomies that exist between the theoretical idealism in content literacy classes, pre-service teachers' stated beliefs and the realities of the school cultures and secondary school classrooms. In Bean's (1997) study of pre-
service teachers' selection and use of content area literacy strategies this became
patently obvious.

Glimpse of Reality

Bean (1997) documented twenty-seven secondary science, social studies,
mathematics, English, art and music pre-service teachers' selections of fourteen
vocabulary and comprehension strategies for a lesson that was presented to their
peers in their methods literacy courses. The following semester he conducted follow-
up interviews with these pre-service teachers on their use of the selected strategies
during a five-day practicum that was attached to a methods course in core content
disciplines, art and music. Documentation showed that there was considerable
variability within and across disciplines of their selections of the fourteen strategies:
graphic organizers, anticipation-reaction guides, writing roulette, the verbal-visual
strategy, word concept maps, study guides, prereading questions, analogical study
guides, text previews, K-W-L, fictionary, jigsaw, parallel notes and bingo games. It is
notable that the two strategies most frequently chosen were the validated graphic
organizer and the anticipation-reaction guide, and that comparisons of the strategy
selection for the microteaching lesson and the subsequent practicum's showed that
only 20% of the pre-service teachers continued to use the original chosen strategy in
subsequent practicum experiences. Eighty percent of the pre-service teachers
reported using only one of the strategies from the course in subsequent practicums.

In an older study of eight-experienced grade 8 and grade 11 English, math,
social studies and science teachers, Ratekin, Simpson, Alvermann and Dishner
(1985) provided a glimpse of actual instructional practices in relation to the teaching
practices advocated by authors of reading method textbooks. Three main categories were examined and documented: (a) teachers' organizational settings and instructional methods, (b) inferred instructional purposes (how students accessed information), and (c) how students internalized (learned) concepts and processes.

Ratekin, Simpson, Alvermann and Dishner's observations revealed that the teachers appeared to use a single textbook, and spent the majority of their instructional time (69%) presenting instructional material in large group or whole class settings. They also appeared to assume almost total responsibility for presenting and clarifying concepts, no time presenting objectives (readiness) and only 1% of the time clarifying concepts (previewing). Instructional methods were mainly lecture or lectures in a question discussion format or monitoring students' independent seatwork.

The English and math teachers spent no time working with small groups compared to social studies and science teachers who spent 4% and 12% of their time respectively. English teachers spent only 12% of their time in lecture and lecture discussion compared to the time spent by math teachers (25%), social studies teachers (40%), and science teachers (48%). Time used with textbooks was English (50%), math (66%), social studies (9%), and science (50%). The use of adjunct aids such as graphic organizers, vocabulary guides, and reading guides was rare.

In contrast, the textbook authors recommended the use of a variety of organizational settings and readiness activities designed to activate students' prior knowledge, to provide a purpose for reading, to gain student interest and to motivate
them to learn. They also advocated the use of how-to procedures such as demonstrations and simulations to help students interpret and integrate text, film and lecture information. The results suggest that providing students with information overshadowed the presentation of instructional readiness activities and the learning of concepts. As well, it is notable that the senior high school teachers used textbooks 66% of the time, whereas the junior high school teachers used textbooks only 21% of the time. The textbook authors also recommended that content teachers use a variety of organizational settings, methods and instructional resources, and advised that teachers and students need to interact actively with the text if a single textbook is used as the primary source of concept development.

Although there may have been many reasons for the low percentage of textbooks used at the junior high school level in this study, one wonders if this could be related to the low number of teachers and teacher educators who viewed content area reading at the elementary school level as important (Bailey and Guerra, 1984). It is significant that this view is changing and the need for content area literacy at the upper elementary school level is now recognized (Loranger, 1999). However, the existence of content courses and method textbooks that advocate for a change in teachers’ knowledge and attitudes about the need for content area reading and strategy instruction at the secondary school level does not ensure that instruction will occur in the classroom.

There are probably a number of reasons why there was such a ‘gap’ between the practices observed in these classrooms and the theoretically ‘ideal’ methods and practices that textbook authors advised in the 1980s and 1990s, and continue to
advise today. The realities of day-to-day life in each of these classrooms may have been one of the reasons. There are also a number of truths about teaching and learning. One such truth is that "good advice is wasted if it does not fit existing patterns of classroom instruction and cannot therefore be used by teachers" (Ratekin, Simpson, Alvermann and Dishner, 1985, p. 436). On the other hand, good advice, once heard by a teacher, may prove useful in the future if or when a different or better teaching strategy is needed.

Tovani (2000) explained, "Few middle and high school teachers feel that they have the time or the expertise to teach students how to read. They have been trained in their content area and are uncomfortable stepping in the role of reading specialist (p. 13). Gunderson (1986) asserted that the issue of reading and learning to read is not considered by secondary teachers to be pertinent to them. These educators place more stress on reading to learn. In addition, secondary school teachers have received little training in the teaching of reading, although there have long been proponents of content reading and strategy instruction at the secondary level (Herber, 1978; Johns and Lenski, 1997; Singer and Dolman, 1980; Vacca 1996, 1999).

This problem is further complicated by the increasing pressure to implement the use of technology into the K to 12 curriculums. The need for L1 and L2 middle school and secondary school students to become content literate for both print text and electronic text has never been greater (Shih, 1992; Vacca, 1999). It is often easier and less demanding for teachers to just lecture when they get "bogged down" (O'Brien & Stewart, 1990). Laverick (2002) posited, "teachers' biggest concern with
using reading strategies was the time it would take away from their usual classroom instruction" (p. 145). Ashman & Conway (1997) reported "secondary teachers argue that because of the pressure on students to complete work, there is no time to interact in a group, to discover and think about the learning processes, or to dwell on topics that are of interest" (p. 12). Vacca (2002) contended that "showing students how to use reading strategies and language processes to learn in the content classroom does not require specialty training, nor does the development of reading strategies diminish the content area teacher's role as a subject matter specialist" (p. 200). This perspective is insightful and well worth pursuing in efforts to overcome barriers and teacher resistance.

**Research Studies with Pre-service and In-service Teachers**

As noted, much is now understood about how to help struggling students become strategic readers. We have declarative knowledge about what to do. The issues, which are ongoing ones, are teachers' knowledge about, and implementation of, teaching and learning strategies for content areas. Teachers need metacognitive knowledge (Garner, 1994) about validated teaching strategies which are content focused and teacher initiated, as well as learning strategies which are student directed and intended to build independence in reading (Kamil, 2003). Teacher knowledge about cognition and metacognition is critical in making value judgments about training approaches and in differentiating between cognitive and metacognitive strategies when developing, analyzing, evaluating or teaching a program. McGilly (1994) elaborated upon the importance of teacher knowledge, stating:
To be successful in mediating and/or teaching strategies for metacognitive awareness and control, teachers must themselves understand cognition and metacognition, including learning theory, be aware of a variety of cognitive and metacognitive strategies, and be able to analyze the strategies they plan to teach into their component parts. Teachers need to be explicit in their explanations regarding the mental acts of strategy use and to know as much about the influence of prior knowledge, strategies, task, and situation as they know about the text itself (pp. 133-134).

The issue of teacher knowledge and the need for help is underscored by the International Reading Association's (2006) statement "middle and high school teachers need help to understand how they can develop content knowledge at the same time that they improve literacy" (p. 2). Farnan and Grisham (2006) asserted, "experienced teachers need to continue their professional development throughout their careers to become 'master teachers'" (p. 103). Statements such as these support the need for, and the call for professional development (Biancarosa & Snow, 2004; Kamil, 2003).

It was not until around the 1990s that researchers began to focus on literacy research in teacher preparation programs (Anders, Hoffman, & Duffy, 2002). Until then, studies in teacher preparation programs on pre-service or in-service teachers' pedagogical thoughts about literacy related aspects (judgments, decisions, and behavior) were conducted on a relatively small scale (Lenski, Grisham & Wold, 2006).
Reinking, Mealey and Ridgeway (1993) described a teaching model formulated for teacher educators’ use to develop students' conditional knowledge of content area reading strategies that matches goals, judgments and independent decision-making based on an analysis of specific real world teaching situations. They approached the challenge with a process that melds instructional strategies with contextual factors that affect teaching in the school setting and result in decision-making for specific teaching situations. To accomplish this feat, the authors developed a teaching model for teacher educators’ use to help the preservice teacher match instructional strategies to the real world of teaching. Reinking, Mealey and Ridgeway (1993) believe that preservice teachers’ familiarity with instructional strategies is not enough; they also need metacognitive knowledge to use content area reading strategies. They also believe that this approach will facilitate preservice teachers’ use of the content area reading strategies when they enter real life settings.

The model is based on the three components of metacognitive knowledge that have been discussed: (a) declarative knowledge; (b) procedural knowledge; and (c) conditional knowledge, 'knowing the when or why'. The model has four overlapping domains and instructional components: (a) model activities that inform about the rationale for using individual strategies and procedures for implementation; (b) analyze activities that model the selection, adaptation and implementation of strategies to fit a particular teaching situation; (c) inform activities that provide practice in selecting, adapting and implementing strategies; and (d) practice activities to analyzing a teaching situation and identify which strategies to use and how to implement them. The authors provided concrete examples of how the model could
guide the development and implementation of instructional activities in a content area-reading course. They also discussed limitations of the process, addressing factors such as why a strategy would or would not work.

What Do Teachers Know and Believe About Content Area Reading?

In a qualitative study, Konopak and Readence (1994) compared preservice and in-service secondary teachers’ theoretical orientations on: (a) how content reading takes place; (b) an instructional approach on how reading develops in the content areas; and (c) specific application choices for decoding, vocabulary and comprehension instruction. Responses to belief statement questions identified the three models of the reading process as (a) the bottom-up model, (b) the top-down model, and (c) the interactive model. For the purposes of their study, the authors labeled the bottom-up model the “text-based model” and the top-down-model the “reader based model”.

Results indicated that preservice teachers’ theoretical orientation on how content reading takes place was toward the interactive process, and that in-service teachers’ theoretical orientation was toward the reader based process. Both groups’ theoretical orientation was toward the reader-based process in terms of how reading develops. In the lesson choices for decoding, both groups’ choices ranged across the three orientations: text based, reader based and interactive. In their lesson choices for vocabulary and comprehension, both groups held reader-based orientations.

This study suggests that opinions and the underlying values and beliefs that preservice and practicing teachers hold about reading need to be clarified and better
understood. The complex problem of the resistance of middle and secondary teachers across the curriculum and the barriers to content area reading and strategy instruction has been a recurring theme in research and education literature since the 1940s (Bintz, 1997).

In an overview of the literature, Konopak and Readence (1994) showed the direction that research in reading education took during the 1980s. This overview indicated that traditional research was dominated by a unidirectional process-product that focused on classroom behaviors and student achievement. This approach shifted to research that examined teachers' theoretical beliefs about reading, instructional choices and interactions with students. This shift caused a debate about the degree to which teachers' views about reading and the learning process influenced their instructional choices and behavior in the classroom. This debate, still ongoing, deals with two investigative positions. The first position suggests that teachers' theoretical beliefs about reading influence their instructional plans and behavior. The second position emphasizes factors such as the sociocultural and environmental realities of the classroom that can constrain the implementation of belief supported instruction.

Konopak and Readence's study is a replication of Kinzer's 1988 study conducted with elementary teachers. Konopak and Readence (1994) adapted instruments from Kinzer's study to reflect an appropriate content area emphasis for secondary teachers. These instruments included two sets of slightly modified belief statements on how reading takes place and how it develops. The three sets of lesson plans used on decoding, vocabulary and instruction were exact replicas of
those used by Kinzer. Identical procedures for data collection were followed. A description of the process for administering the instruments was provided, and the two sets of belief statements and three sets of lesson plans were included in the appendices.

The question of identifying a teacher's internalized theoretical orientation of the reading process is one perspective that has been researched. Another question that has been researched is the reader's internalized orientation of the reading process. Research studies conducted with young English readers in the 1970s compared their reading orientation with their oral reading. Results of this study "provided convincing evidence that (English) readers.... have internalized models of the reading process that they bring to bear when they read" (Devine, 1986, p. 127). Research with beginning and low intermediate ESL subjects suggested that second language learners also have theoretical orientations toward reading. These studies suggest that there is a significant correspondence between the orientation that subjects hold and the type of information they focus on in oral reading. A relationship can be found between the internalized model of reading and the success in understanding text material.

Barry (2002) conducted a study surveying middle and secondary in-service teachers she had taught in an undergraduate course, *Teaching Reading in Content Areas*. Although she did not specify the number of responses she received, respondents' primary responsibilities were in eleven different areas across the curriculum. Respondents to the survey indicated that they used (a) graphic organizers, (b) vocabulary strategies, (c) Directed-Reading-Thinking Activities, (d)
anticipation guides, (e) K-W-L, (f) think-alouds and (g) reciprocal teaching. Barry’s results supported Pressley’s (1998) findings that teachers in effective instructional programs were aware of literature on instructional strategies and methods and made use of selected ones.

The Value of Teaching Reading Strategies

In the past decade researchers examining processing of information texts have developed hypotheses about why readers may be unstrategic in their reading. One hypothesis is that readers recall information that is of high interest rather than information that is structurally important. A second hypothesis is that readers lack strategies necessary to determine what is important in the text. A third hypothesis is that contextual factors in the classroom may influence what readers deem interesting or important.

Jetton and Alexander (1997) provided a brief glimpse of the instructional value of teaching strategies in three grade nine science classroom communities. In their ethnographic study, the authors analyzed text ratings, questions and class discussions to explore what teachers signaled as interesting or important in a reading from the text in their classroom discussions and assessments. The findings were then compared with what students deemed interesting and important in the text.

The researchers observed that differences in the three classroom communities appeared to vary depending upon several factors. Differences existed in the students’ ability to judge what information the teachers valued in the text. Students’ proficiency at using the knowledge was at least partially dependent upon
the teachers' content knowledge and pedagogical skills. This was not surprising. The authors were insightful in recognizing two reasons why students and some teachers did not pay attention to the structurally important content in the text. One reason was students' lack of the subject matter knowledge needed to grasp important concepts. A second reason was a lack of pedagogical knowledge.

The authors also suggested "factors within the learner may have contributed to this difference" (p. 305). This is an understatement, because in saying 'factors within the learner may have contributed to this difference' the authors have glossed over an important consideration when conducting research in the science domain or when working with science teachers. Teaching science can be very difficult because of naive beliefs; that is, inaccurate beliefs about a phenomenon acquired through uncontrolled observation. The naive belief theories posit that the "presence of well-developed but incorrect theories, coupled with everyday experiences that seem consistent with these theories, leads to a set of beliefs about how the world operates that is very difficult to dispel" (Bruning, Schraw, & Ronning, 1995, p. 349). This observation is recognized and supported by Alvermann, Young, Weaver, Hinchman, Moore, Phelps, et al. (1996) in a discussion of the incompatibility of the texts. In an investigation of the relationships between a student's prior knowledge of a topic and the comprehension of a text, the researchers noted that these inconsistencies may be caused either by inaccuracies within the text or the learner's misconceptions and errors in understanding, and, "when texts are incompatible, prior knowledge (whether correct or not) will override the textbook material" (Dupuis & Merchant, 1993, p. 159).
Summary of Historical Perspectives of Content Area Reading

This literature review has traced the evolution of the field of content area reading and the paradigm shifts associated with content area reading and strategy instruction over the last century. Key figures have been identified that contributed to the field, and their research and publications and the consequent impact on the development and direction of the field have been examined. The discussion moved from the early foundations of reading and content area reading by experimental psychologists around the beginning of the century to the behaviorist era of the 1920s through to the 1960s. This was followed by a discussion of the cognitive era of the 1970s and 1980s, and the social constructivist era of the 1990s to the present. There followed an examination of the complexities of the adolescent population, and the role of teacher education, teacher research and teacher resistance to content area reading instruction.

It is evident that the school of thought about the need for and attention to content area reading and strategy instruction that existed at the beginning of the 20th century still exists today, and that need is greater than ever before. As well, with the increased body of knowledge about the reading and learning come calls for renewed attention to the literacy need of adolescents (Moje, Young, Readence, & Moore, 2000). These calls have not gone unheeded. Shih (1992) and Vacca (1999) noted that students should be helped to learn how to read to learn, and that the need for middle school, secondary school and ESL students to become content literate for both print and electronic text has never been greater. This belief has been reiterated at the beginning of the 21st century. Moje, Young, Readence and Moore (2000)
pointed out that "adolescents' literacy needs for the future are complex and
demanding...the development of this age group's reading, writing and language
skills deserves serious and continuing attention" (p. 400).

The purpose of this study is to take a closer look at issues related to content
area reading outlined in this chapter by examining teachers' beliefs, perceptions and
practices. This study explores how teachers in one large urban school district in
Canada approach the paradigms, theoretical perspectives and understandings of
adolescents' needs and abilities in relation to content area reading and strategy
instruction. It is hoped that this study can serve to focus this complex area of
concern, including the obstacles to implementing content area reading instruction,
and assist in providing teachers, teacher educators and policy-makers with
knowledge and direction for professional development.
CHAPTER III
Methodology

Chapter three contains a description of the methodology used for this cross-sectional survey research conducted with secondary teachers in eighteen secondary schools in a large multicultural school district in Western Canada in the spring of 2004. The description includes the initial planning stages for the survey, the research design, and the development of the survey instrument, data collection procedures and data analysis procedures.

The Planning Stage

The planning stage for the research consisted of a three-step procedure to specify the purpose of the research, set the objectives and identify the guiding assumptions. The purpose of the research was to investigate secondary teachers' beliefs and practices about educational factors that influence adolescent content area reading. The term content area reading was chosen because it refers to a specific aspect of adolescent literacy. One that examines reading comprehension within and across disciplines. The objectives were twofold. The first objective was to explore secondary teachers' knowledge and beliefs about content area reading and their attitudes, expectations and experiences with their students' reading. The second objective was to describe secondary teachers' perspectives on literacy issues and adolescents' content area reading needs and problems. The research was guided by five assumptions:

1. Teachers may have insufficient information about students' reading abilities and skills.
2. Teachers who have taken courses on reading instruction are more likely to recognize their students' academic reading needs.

3. Teachers who have taken content area reading courses are more likely to acknowledge the benefit of reading and strategy instruction in content areas.

4. There may be substantial variability in strategy instruction methods used within and across disciplines.

5. There may be substantial variability in the types of strategies used within and across disciplines.

**Research Questions**

The study focused on seven research questions:

1. What are teachers' beliefs about their students' content area reading abilities and skills?

2. What are teachers' experiences with assessment and evaluation of their students' reading abilities and skills?

3. What types of instructional methods, strategies and resources do teachers use to help students learn from texts in their own content areas?

4. What types of programs and services are available to teachers for their students?

5. What types of inservice programs and professional development programs on content area reading are needed?

6. What are secondary teachers' understandings of the reading processes?

7. What are teachers' attitudes toward content area reading and strategy instruction?
Research Design

Research Sample

The target population was 275 secondary teachers who held Department Head or Teacher Head positions in their respective schools. This population of teacher leaders was selected because of their subject area expertise and educational leadership roles. It was expected that individuals who held this role would be more likely to have an understanding of the issues confronting students in content area reading. Teachers' names and their leadership positions were obtained from the school district's Ready Reference of All District Services 2003.

The role and qualifications for teachers who held leadership positions were defined in the school district's document Teacher Leaders: A Model for Secondary Schools (1999), where it was stated that:

The primary role of a Teacher Leader is to provide educational leadership, within a particular curriculum area or educational initiative, in order to promote the learning experiences of students. The Teacher Leader should possess a sense of vision and be skilled in mentoring, coordinating and communicating. All Teacher Leaders should fit the above description, however more specific qualities could be attached to a specific role (p. 4).

As well, it is noted in this document “the structure and configuration of the school leadership positions will be developed collaboratively at each school by its staff committee and administration” (p. 6).

Subsequent to the initiation of this research project, the terminology Teacher Leader used by the school district was modified to Department Head. For the
purpose of this dissertation, the title teacher will be used to represent both Department Heads and Teacher Leaders.

Survey Instrument

The researcher-designed survey instrument is a ten-page booklet containing a questionnaire entitled Secondary Teachers' Perspectives on Adolescent Content Area Reading (Appendix A). A ten-page layout was considered to be not too long, nor too complex, and gave sufficient space for the organization of twenty-eight questions covering seven topics: (a) teaching conditions, teaching load and teaching positions; (b) reading and comprehension difficulties; (c) instructional methods, strategies, resources and instructional frequency; (d) assessment and evaluation; (e) teacher needs; and (f) teacher demographics. Booklet formats are also easy to mail.

Rationale for the Instrument

The rationale for using a self-administered mailed questionnaire as a survey instrument to gather data was that it was a relatively speedy and economical means of obtaining input from a large sample of secondary teachers with subject area expertise who held educational leadership positions in their respective schools. The names and addresses of the schools and the names of the teachers who held these positions were accessible under the Freedom of Information Act, and were readily available in the district's publication of district-wide services as well as in the schools. Another consideration was the amount of time teachers would need to devote to completing a questionnaire. It was estimated that the time required would be approximately 15 minutes. There were no known risks to respondents, and they were assured of confidentiality. The back page contained a space to write an
identification code upon return of the questionnaire. It was hypothesized that the questionnaire would provide participants with an opportunity to reflect on their students' content area reading needs and abilities, and to voice concerns, needs, frustrations and expertise in their specific subject areas.

**Question Types**

The three question types used in developing the questionnaire were closed or structured questions, partially open-ended questions and open-ended questions. Thirteen of the questions were closed or structured questions with selected-response or forced-choice items. Several different types of response items were used with these closed questions. These included (a) single response items, (b) multiple-dichotomy items (Palys, 1997, 2003), (c) multiple response items, (d) branching items, (e) sets of Likert-type items, and (f) ranking responses (Wiersma, 2000). Thirteen of the questions were partially open-ended, as they provided choices but also gave respondents the option of completing an open-ended category to describe or specify their own responses (Dillman, 1978). Only two of the questions were completely open-ended, which allowed respondents to answer with a wide and undefined range of responses (Palys 1997, 2003; de Vaus, 2002). Responses to each variable in the questions were numbered, and precoding was allocated to each set of categorical alternatives and rating scales so that data could be easily categorized and entered into the SPSS-10 program. A codebook was developed for data cleaning and data analysis purposes.
Description of Question Content and Format

Teaching conditions, teaching load and teaching positions.

In questions 1, 2 and 3 the respondents were asked to indicate the number of subjects, classes and students taught in a week during the current semester. They were also asked to report the number of students in their smallest and largest classes, what grades they were scheduled to teach in the 2003-2004 school year and what leadership position(s) they held.

Question 1 was designed to gain a profile of the teacher's worklife. This question had five single response items with blanks for respondents to fill in the number of subjects, classes, and students taught in a week during the current semester, and the number of students in their smallest and largest classes.

Question 2 was devised to elicit information about respondents' teaching load in the 2003-2004 school year. Respondents were asked to indicate, from a list of fourteen items, which foundation studies and selected studies or electives they were scheduled to teach to students in grades eight through twelve. Respondents also had the option of completing an open-ended category to add other studies that were not on the district's course of study. The mandated foundation studies listed on the questionnaire were (a) English, (b) Social Studies, (c) Science, (d) Mathematics, (e) Physical Education, (f) French, and (g) Career and Personal Planning (CAPP). The selected studies listed were the Applied Skills (Technology, Home Economics and Business Education), Spanish and Fine Arts (Art, Music and Visual Arts).

Question 3 was devised to identify the local named leadership position(s) that respondents held. Respondents had the option of selecting which leadership
position(s) they held from a list of seventeen single response items, and the option of completing an open-ended category if alternate title(s) were different.

**Reading and comprehension difficulties.**

Question 4 was designed to determine respondents' views about the number of their students who were experiencing reading and comprehension difficulties. Respondents were asked to rate approximately how many of their students had difficulties with any of the twenty listed reading and comprehension skills (Elley, 1994; Warren, Rees, & Edwards, 1992). Rating was on a Likert scale with a set of five numbered and coded response categories (a) none, (b) a few, (c) about half, (d) most, and (e) all. Respondents also had the option of completing an open-ended category to specify subjects taught that differed from those listed on the questionnaire.

**Instructional methods, strategies and resources.**

Questions 5 to 11 were devised to find out what instructional methods, strategies and resources respondents used.

Questions 5 and 6 were closed questions with five forced-choice items and question 8 was a closed question with 9 forced-choice items. All three questions had a frequency response on a Likert scale with a set of four numbered and coded related responses (a) never, (b) rarely, (c) sometimes, and (d) often (Wiersma, 2000).

Question 5 directed respondents to rate the frequency of their use of five types of instructional groupings with their classes. In question 6 respondents were asked to rate their use of five types of instructional formats with classes, and in
question 8 they were asked to rate their use of nine types of instructional resources with classes. Respondents also had option of completing an open-ended category for questions 6 and 8 in order to describe the instructional formats and strategies they used.

Questions 7 and 9 were closed questions with single response items and the option of completing an open-ended category to describe other strategies and aids used. In question 7 respondents were requested to select, from a list of eight instructional strategies, the three that they used most frequently to teach reading comprehension (Warren, Rees and Edwards, 1991). In question 9 the respondents were asked to select the instructional aids they preferred to use from a list of four instructional aids (a) adjunct aids, (b) blackboard, (c) overhead projector, and (d) PowerPoint.

**Instructional frequencies.**

The purpose of questions 10 and 11 was to find out how frequently students were taught to read different text structures, and how frequently teachers encouraged them to read different types of material outside of school.

Question 10 was designed to determine the frequency of teacher-provided instruction for different text structures. Question 11 was designed to explore students' reading outside of school. They were both closed questions with forced-choice formats and a Likert scale with a set of five numbered and coded related responses (a) never, (b) 3 or 4 times a year, (c) about once a month, (d) at least once a week, and (e) nearly every day.
In question 10 the respondents were asked to rate the frequency of use of three reading formats (a) narrative, (b) expository, and (c) documents, and the option was given of completing an open-ended category to specify other formats they used. In question 11 the respondents were asked to rate on a Likert scale how often students were encouraged to read books, newspaper articles and magazine articles, or to read for their courses outside of school. This question also asked the respondents to rate how often they suggested specific web sites for students to explore, and how often they held discussions about the material read.

**Assessment and evaluation.**

Questions 12 to 19 were designed to elicit information about (a) struggling readers, (b) their gender, (c) the assessment techniques used, (d) student information available, and (e) types of instructional programs and special services available in the schools. These questions had several different response modes.

In question 12 respondents were asked to rate the percentage of their students in grades 8 through 12 that they perceived to be struggling readers on a Likert scale with a set of five numbered and coded related responses (a) less than 25%, (b) 25% to 50%, (c) 50% to 75%, (d) more than 75%, and (e) don’t know.

In question 13 respondents were asked to indicate the gender of the majority of their struggling students using dichotomous items (male or female).

Question 14 was an open-ended question asking the respondents' opinions about what has impeded struggling students' literacy development (Warren, Rees and Edwards, 1991).
In question 15 the respondents were asked to check any or all of nine assessment techniques that they used to assess their students' reading skills, needs and abilities. The nine techniques were (a) standardized tests, (b) teacher assessment, (c) student records, (d) student self-assessment, (e) observation, (f) individual assignments, (g) informal reading inventories, (h) cloze tests, and (i) content area reading inventories. Respondents also had the option of completing an open-ended category to describe other procedures they used.

Question 16 had a yes or no response alternative format for respondents to indicate whether or not their school provided them with eight types of student information about students' skills, interests and attitudes. The eight types of student information were (a) instructional reading levels, (b) strategies they employ when using specialized and technical vocabulary, (c) competence with literal levels of comprehension, (d) competence with inferential levels of comprehension, (e) competence with literal critical levels of comprehension, (f) background knowledge in our subject area, (g) skill with study techniques, and (h) interests and attitudes. Respondents also had the option of completing an open-ended category to describe other information provided by the school.

Questions 17 to 19 had yes or no response alternatives with different forms of open-ended categories. Question 17 had a yes or no response alternative with a branching item. Branching items are those that a respondent may be explicitly directed to skip depending upon the response (Wiersma, 2000).

Question 19 had a yes or no response alternative. If respondents agreed that there were factors that hindered the development of school wide efforts to deliver
content reading programs or services, they were asked to check any or all that apply to them from a list of the seven single response items. These items were (a) reading is not the responsibility of content teachers, (b) school lacks administrative support or leadership, (c) lack of inservice education, (d) lack of qualifications to guide students' reading, (e) lack of personnel to coordinate programs, (f) such a program is not needed, and (g) financial support is lacking. Respondents also had the option of specifying other factors in an open-ended category.

**The needs of teachers.**

Questions 20 to 24 were designed with three purposes: (a) to elicit teachers' views about the kinds of support they would like to have for struggling readers in their classes and their schools; (b) to elicit information about the types of in-service programs they would like made available on content area reading; and (c) to find out how much respondents knew about content area reading, their level of satisfaction with this knowledge and their rate of attendance to inservice programs over a period of three years. Questions 20 to 24 also had different forms of response. Question 20 was an open-ended question asking respondents what support they would like to have for struggling readers in their classes or in their school. Question 21 asked respondents to rate how much they know about teaching content area reading on a Likert scale with a set of four predetermined numbered and coded related responses (a) nothing, (b) some, (c) a lot, and (d) everything. In question 22 the respondents were asked to rate their level of satisfaction with their knowledge about teaching content area reading and strategy instruction on a Likert scale with a set of five numbered and coded related responses (a) very dissatisfied, (b) somewhat
dissatisfied, (c) somewhat satisfied, (d) satisfied, and (e) very satisfied. In question 23 the respondents were asked to rate how many times they had attended an in-service program on reading in the last three years on a Likert scale with a set of five numbered and coded related responses (a) none, (b) once, (c) twice, (d) 3 times, and (e) 5 or more times. Question 24 gave teachers the option of selecting any or all of the types of inservice programs on content area reading they would like made available from a list of eight single response items, and the option of describing inservice programs they would like in the open-ended category. The eight types of in-service programs given on the questionnaire were: (a) developing comprehension skills; (b) diagnosing individual instructional needs; (c) using writing, speaking, and listening in reading instruction; (d) providing for the disabled reader in the classroom; (e) developing reading goals and objectives; (f) differentiating instruction for different groups; (g) using supplementary reading materials; and (h) using the library effectively.

**Teachers' demographic characteristics.**

Questions 25 to 28 were devised to develop a profile of respondents' (a) gender, (b) age, (c) earned degrees, and (d) years of teaching experience as of June 30, 2004. In question 25 they were asked about gender, from two-response alternative (dichotomous items), male or female. In question 26 they were asked to indicate their age category (a) 21 to 30, (b) 31 to 40, (c) 41 to 50, (d) 51 to 60, or (e) over 60. In question 27 they were asked to indicate their earned degree(s) from a list of eight degrees with the option of stating other qualifications in an open-ended category. Question 28 had three single response items with blanks for respondents
to indicate how many years they will have taught at the elementary, secondary, or other levels as of June 30, 2004.

Pretesting

In order to identify problems with the questionnaire, it was piloted with several secondary teachers who did not work in the district, as recommended by Palys (1997). Once the pretesting was completed, an application was made to the University's Behavioral Review Ethics Board for approval to conduct this survey research study. Upon approval and receipt of the Acceptance of Approval Form from the Behavioral Review Ethics Board (Appendix B), a complete proposal package was submitted to the district's Learning Services Research Committee for approval to conduct the survey with secondary teachers in the eighteen secondary schools. The proposal package contained a cover letter, the questionnaire and a self-addressed, stamped return envelope. Permission to conduct the research was granted. Permission was also given to use the school district's internal mail service to deliver the survey package and follow-up postcards to teachers in all eighteen schools.

Data Collection Procedures

Complete survey packages were individually addressed with names, positions and schools, and were sent to each school principal and the targeted teachers. The mailing was timed so that the packages would arrive in the schools on the Tuesday following the district's spring break. It was timed this way because it was believed that teachers would be relaxed from their vacation and not yet bogged down with marking, preparation concerns and time constraints. Each survey package
contained a cover letter, the questionnaire and a self-addressed stamped return envelope. The cover letter (Appendix C) was carefully constructed and individually addressed to establish the legitimacy of the study and the respectability of the researchers, as recommended by Tuchman (1999). The self-addressed, stamped return envelope was addressed to the principal investigator's mailbox, and in order to add a personal touch it was stamped with a first class stamp rather than a postage meter stamp. This personal touch was a strategy used to increase the response rate.

Several other strategies were used to ensure a good response. The questionnaire was printed on green paper for differentiation and ease of retrieval from other papers. The following statement was included on the cover page of the questionnaire to quell any uncertainties teachers had about participating in the survey, “This is a voluntary, but important survey. All of the information that you provide in this questionnaire is strictly confidential. Questionnaires contain identification codes for statistical purposes only. All information that would permit identification will be removed”. The cover page also stated the time the survey would take to complete, asked participants to “please read the instructions carefully and respond in pen”, and reassured participants that “their honesty was appreciated”. Directions for the completion of each individual question were given to ensure consistency in the responses, and a thank-you as an expression of appreciation was added at the end of the questionnaire, as recommended by Dillman (1978). A final strategy was to ask respondents to “Please return this questionnaire in the postage-
paid addressed return envelope". Return envelopes did not have any identifiers on them. Identification numbers were only used to identify missing questionnaires.

Follow-up procedures involved a second and third mailing of reminder postcards to nonrespondents (Appendix D). The first reminder postcard was sent to nonrespondents through the district’s internal mail service ten days after the mailing of the questionnaire. A second reminder postcard was sent to nonrespondents through the district’s internal mail service two weeks later.

**Data Entry Procedures**

The first step in the data entry procedures was to complete the data-definition process. Raw data from the questionnaire were typed directly onto the Statistical Package for the Social Science (2000) (SPSS-10) spreadsheet to create a data file. The identification number on the back page of each questionnaire, which had been assigned to protect the anonymity of the participants (cases), was entered into the first cell ‘column’ on the spreadsheet. Each additional piece of information (variable) was given a descriptive name and entered in the variable label column in the same order as the questions on the questionnaire. Each variable was then assigned a numeric type value label that had numbers or a string of alphanumeric type value labels that contained alphabetical characters. The majority of the variables on the questionnaire had the numeric type value label that SPSS-10 assigned by default. If a response was missing, or could not be deciphered, it was deemed a missing value. Variables on the questionnaire that were open-ended had alphanumeric type value labels.
Once this data-defining process was completed, all of the coded data on each questionnaire was entered into the spreadsheet. As stated earlier, each of these variables had already been assigned a numbered response and a code on the questionnaire. These data were saved and a completed data file was printed and checked manually against each questionnaire. Data errors were identified and corrected on SPSS-10. Frequency tables were run again to obtain output results. The data were cleaned a second time. The frequency tables and graphs were then copied and pasted into Microsoft Word and printed. Graphs for the dissertation were made on Microsoft Excel. The data file was then considered ready for analysis and report preparation.

**Data Analysis Procedures**

The data file was examined using statistical analysis that included univariate analysis techniques that showed the frequency distribution of one variable, and bivariate analysis techniques that showed a joint distribution of two variables. This analysis was used to indicate that scores were paired in some logical way for measures of central tendency and crosstabulation. The multiple response method was used to code the two open questions with multiple answers (de Vaus, 2002). This involved an examination of the teachers’ responses and the categorization and coding of the responses into multiple variables that could be used for discussion purposes. Data from the open-ended responses of partially open-ended questions was typed separately and analyzed.
Limitations of Methods Used

Four limitations of this study have been identified. The first limitation of this study is that the unit of analysis is confined to Teacher Leaders. This study does not account for the beliefs, values and attitudes of other teachers in the departments under these Teacher Leaders. A second limitation of this study is that sampling errors occurred because participants failed to return the questionnaires. Teachers may have failed to respond to and return the questionnaire because the names provided by the district were outdated or incorrect. Changes may have occurred in the teachers holding positions between the time the VSB Ready Reference was published and the time the questionnaires were distributed. Teachers may not have assumed or continued in their title positions for reasons such as illness, stress leave, leave of absence, or personal reasons.

A third limitation is that the questionnaire data may be affected by the compliance affects or socially desirable responses to questions on instructional practices or attitudes (Elley, 1994). A fourth limitation may be teachers’ resistance to addressing the issue of adolescent academic literacy, even though they were assured that all responses would be kept confidential and identification codes on the back of the questionnaire would be used for statistical purposes only.

Chapter Summary

This methodology chapter consisted of a description of the steps involved in conducting survey research with secondary teachers who held leadership positions in a large multicultural school district in Western Canada. The three-step procedure in the initial planning stage identified the purpose of the research, the objectives and
the guiding assumptions. The description of the research design used for the study identified and described the sample population, and the design, contents and types of questions in the survey instrument. Data collection and data entry and analysis procedures with SPSS-10 were discussed. This data provided the findings needed for an analysis of teachers' beliefs, attitudes and knowledge about content area reading and their students' reading needs, abilities and skills.
CHAPTER IV
Research Findings

Chapter 4 contains a discussion of the findings from data collected from one hundred and nineteen secondary teachers from eighteen secondary schools (grades 8 through 12) in Western Canada who held educational leadership positions within a particular curriculum area or educational initiative. This was a response rate of 43%. Data were collected from a 28-question survey entitled Secondary Teachers’ Perspectives on Adolescent Content Area Reading. The following findings are discussed (a) respondents’ demographics and worklife, (b) respondents’ perceptions of students’ content area reading and comprehension skills, (c) respondents’ stated use of assessment and evaluation, (d) instructional programs and services available to teachers, (e) respondents’ needs, and (f) respondents’ attitudes and understanding of the reading process. As can be seen from Table 2 eighteen disciplines were represented in the sample. Thus it was not possible to report the data by discipline as there were insufficient responses by discipline to allow for a more detailed analysis.

Respondent Demographics and Worklife

Demographics.

Respondents’ demographic characteristics (a) gender, (b) age, (c) qualifications, and (d) teaching experience (see Table 1), and worklife (e) numbers of subjects, (f) classes, (g) students taught, and (h) class size are described in the first section of this chapter.
Gender and age.

The one hundred and nineteen respondents who responded to the questionnaire were almost equally male (n = 58, 52%) and female (n = 54, 48%), and ranged in age from 21 to 60 plus years. Gender was not indicated by 8% (n = 7) of the respondents. Only one respondent was below 30 years of age and three were over 60 years of age. Nineteen percent (n = 21) of the respondents were in the 31-40-age range, 33% (n = 37) were in the 41-50-age range and 45% (n = 50) were in the 51-60-age range. It is worth noting that 78% of the respondents ranged in age from forty-one to sixty years, and may have taken teacher training and had mentors in the years between 1960 and 1980.

Qualifications and teaching experience.

All of the respondents held undergraduate or fifth year degrees. Sixty-six percent had earned degrees from outside a Faculty of Education: (a) 43% (n = 48) had a BA or equivalent, (b) 19% (n = 21) had a BSc or equivalent, and (c) 4% (n = 4) had a MSc or equivalent. Of those respondents who had earned degrees in a Faculty of Education, 50% (n = 56) had a Bachelor of Education degree, 25% (n = 28) had a Master of Education degree, and 39% (n = 44) had a Teaching Diploma. One respondent had a Ph.D. Seven respondents did not disclose information about their qualifications. Only a few respondents (n = 12) had teaching experience at the elementary levels, and fewer still (n = 7) had teaching experience outside the public school system. Of the 110 respondents who answered this question, 17% (n = 19) had taught between 30 to 39 years, 31% (n = 34) had taught between 20 and 29 years, 36% (n = 40) had taught between 10 and 19 years, and 14% (n=15) had
taught less than 10 years. The majority of respondents' teaching experience (n = 86) was only at the secondary level.
Table 1: Respondents' demographic characteristics.

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>58</td>
<td>52</td>
</tr>
<tr>
<td>Female</td>
<td>54</td>
<td>48</td>
</tr>
<tr>
<td>Gender not noted</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>31-40</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>41-50</td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>51-60</td>
<td>50</td>
<td>45</td>
</tr>
<tr>
<td>&gt;60</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Age not noted</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Qualifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BA</td>
<td>48</td>
<td>43</td>
</tr>
<tr>
<td>B. S.</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>B. Ed.</td>
<td>56</td>
<td>50</td>
</tr>
<tr>
<td>Teaching diploma</td>
<td>44</td>
<td>39</td>
</tr>
<tr>
<td>MA</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>M.S.</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>M. Ed.</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note Total percentage is greater than 100 because some respondents checked more than one position.

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Elementary</th>
<th>12</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Secondary</td>
<td>109</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

*Note. Percentages were rounded to the nearest whole number. “Gender not noted” represents the respondents who did not record their gender. “Age not noted” represents the respondents who did not record their age.
Leadership positions.

The highest number of responses (see Table 2) was from respondents who held leadership positions in English (11%, n = 12), followed by an equal number of responses from those who held leadership positions in: (a) Modern Languages (10%, n = 12); (b) Physical Education (10%, n = 11); (c) Mathematics (10%, n = 11); and (d) Home Economics (10%, n = 11). Slightly fewer responses came from respondents who held positions in: (a) Resource Services (8%, n = 9); (b) ESL (8%, n = 9); (c) Technology (8%, n = 9); (d) Science (8%, n = 9); (e) Tech Studies (7%, n = 8); (f) Business Education (7%, n = 8); (g) Special Education (7%, n = 8); and (h) Social Studies (7%, n = 8). The fewest responses came from respondents who held positions in: (a) Fine Arts (5%, n = 6); (b) Applied Skills (4%, n = 4); and (c) Student Services (2%, n = 2). The respondents identified nineteen additional leadership positions or initiatives specific to their individual schools (a) School growth-literacy, (b) Literacy, (c) Climate, (d) Advocacy/Inclusion, (e) Art Department Head, (f) Career Prep Supervisor, (g) Alternative ED, (h) Cross curricular initiatives, (i) Professional Development Chair (Pro-D), (j) School initiatives/social responsibility, (k) Career and Personal Planning (CAPP), (l) Tourism, and (m) Counseling Department Head.
**Table 2: Number and percentages of teacher leadership positions.**

<table>
<thead>
<tr>
<th>Position</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>12</td>
<td>10.5</td>
</tr>
<tr>
<td>Modern Languages</td>
<td>12</td>
<td>10.4</td>
</tr>
<tr>
<td>Physical Education</td>
<td>11</td>
<td>9.9</td>
</tr>
<tr>
<td>Math</td>
<td>11</td>
<td>9.6</td>
</tr>
<tr>
<td>Home Economics</td>
<td>11</td>
<td>9.6</td>
</tr>
<tr>
<td>Resource Services</td>
<td>9</td>
<td>8.0</td>
</tr>
<tr>
<td>ESL</td>
<td>9</td>
<td>7.9</td>
</tr>
<tr>
<td>Technology</td>
<td>9</td>
<td>7.9</td>
</tr>
<tr>
<td>Science</td>
<td>9</td>
<td>7.8</td>
</tr>
<tr>
<td>Tech Studies</td>
<td>8</td>
<td>7.1</td>
</tr>
<tr>
<td>School Growth</td>
<td>8</td>
<td>7.1</td>
</tr>
<tr>
<td>Special Education Support</td>
<td>8</td>
<td>7.0</td>
</tr>
<tr>
<td>Business Ed</td>
<td>8</td>
<td>7.0</td>
</tr>
<tr>
<td>Social Studies</td>
<td>8</td>
<td>7.0</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>6</td>
<td>5.3</td>
</tr>
<tr>
<td>Applied Skills</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>Student Services</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>Other positions or initiatives</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

Total percentage is greater than 100 because some respondents checked more than one position.
Worklife

Teaching conditions and teaching load.

On average, the respondents taught five subjects and 14.8 classes to 180.5 students per week (see Table 3). Responses tended to congregate around the mean with the exception of the total number of students taught per week, which ranged from 176 to 200. The average number of students in the smallest class was 18.9 and the average number of students in the largest class was 29.7.

Table 3: Number of subjects, classes, and students taught and class sizes reported by respondents.

<table>
<thead>
<tr>
<th></th>
<th>No. of subjects</th>
<th>No. of classes</th>
<th>No. of students</th>
<th>Smallest class size</th>
<th>Largest class size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.1</td>
<td>14.7</td>
<td>180.5</td>
<td>18.9</td>
<td>29.7</td>
</tr>
<tr>
<td>Median</td>
<td>4</td>
<td>18</td>
<td>176</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Mode</td>
<td>4</td>
<td>18</td>
<td>200</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>n</td>
<td>103</td>
<td>104</td>
<td>100</td>
<td>102</td>
<td>103</td>
</tr>
<tr>
<td>TOTAL</td>
<td>119</td>
<td>119</td>
<td>119</td>
<td>119</td>
<td>119</td>
</tr>
</tbody>
</table>

Summary of Respondents’ Demographics and Worklife

Almost half of the respondents held Bachelor degrees (e.g. BSc or BA) from outside a Faculty of Education, and the rest held Bachelor degrees (BEd) from within a Faculty of Education. Slightly fewer than 25% of the respondents held Master degrees from outside a Faculty of Education, and 25% held Master degrees from within a Faculty of Education. The teaching experience of the majority of the respondents was limited to the secondary level. An almost equal number of the 119 male and female teachers who responded tended to be in the middle or toward the
end of their careers. The issue of respondents' age and the length of their careers as teachers are noteworthy in light of the new knowledge we have and the changing trends and practices since they first received their degrees.

Respondents who were representative of all disciplines and grades levels responded to questions about their teaching conditions and workload. On average, respondents taught five subjects and 15 classes per week to 181 students. The average size of the smallest class was 19 students and the average size of the largest class was 30 students.

Respondents' Perceptions of Struggling Students

This second section includes results related to the respondents' perceptions of the percentage of struggling readers in their classes, who these struggling readers were, and impediments to students' literacy development. The respondents' perceptions of their students' reading and comprehension difficulties are organized and discussed by skill-sets (a) word recognition skills, (b) text level reading and comprehension skills, (c) critical reading, (d) graphic aids, and (e) problem solving and basic study skills.

Struggling Readers

As Figure 1 shows, respondents indicated that a substantial number of their students struggled with their literacy development, particularly students in grades 8 through 10, and slightly fewer students struggled at the grade 11 and grade 12 levels. Thirty-three to forty-one percent of the respondents who taught grades 8 through 10 believed that 25% to 50% of their students were struggling readers. This compares to 20% to 23% of the respondents who taught grades 11 and 12, and who
thought that 25% to 50% of their students struggled. Only 14% to 20% of the respondents believed that 50% to 75% of their grades 8 through 12 students were struggling readers. Fewer respondents, 2% to 8%, believed that more than 75% of their grades 8 through 12 students were struggling readers. It is important to note that there were missing responses (gaps in the data) for this question. From 24% to 38% of respondents teaching these grades did not answer this question, and an average of 12% responded with the non-substantive answer “Don’t Know”.

Figure 1: Respondents’ perceptions of the percentage of struggling readers in grades 8 to 12.

Total percentage is greater than one hundred because respondents were able to check more than one category.
Gender of Struggling Readers

Ninety-seven percent of the respondents (n = 86) indicated that the majority of the struggling students in their classes were male. Comments from a few respondents who did not see that pattern included (a) “both genders”, (b) “close to equal”, (c) “difficult to generalize”, and (d) “can’t say”. Two reasons offered by respondents for the perceived gender gap in reading were: “For boys, it’s cool to be stupid and not read”; and “The episodic methodology of teaching reading doesn’t work for boys”. These responses are consistent with studies of perceptions of struggling readers (Blair & Sanford, 2002; Brozo, 2005, 2006; O’Donnell, 2005; Taylor, 2005).

Content Area Reading and Comprehension

The respondents were asked how many of their students had difficulties with twenty reading and comprehension skills. These skills are discussed under the following skill-sets (a) word recognition skills, (b) text level reading and comprehension skills, (c) critical reading, (d) graphic aids, and (e) problem solving and basic study skills. Survey respondents were asked to report on a likert scale with up to six options. For ease of reporting the data, these options have been grouped into three categories, e.g., most and all have been combined to form a category.

Skill set 1: word recognition skills.

Knowledge of letters and associated sounds and phonics (sounding out words) are word recognition skills that all middle school students and secondary students are expected to have mastery of in order to decode effectively the vocabulary that they encounter in their
content reading (Miller, 2003). Sixteen percent of respondents (see Figure 2) thought that about half of their students struggled with phonics, compared to 9% (n = 9) who thought that most or all of their students struggled. Seven percent (n = 7) of the respondents thought that about half of their students struggled with knowledge of letters and associated sounds, compared to 6% (n = 6) who thought that most or all struggled. These responses suggest that some respondents recognized students’ difficulties with word recognition skills. Block and Pressley (2003) argued that if a reader cannot decode the words, comprehension of text is logically impossible. This suggests that if a reader does not have good word-level skills, difficulties will occur with above-the-word-level comprehension processes used by good readers (Pressley, 2002) as they go through text (Pressley and Afferbach, 1995).

Figure 2: Respondents’ perceptions of the percentage of students struggling with word recognition skills.

<table>
<thead>
<tr>
<th>Word Recognition Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonics</td>
</tr>
</tbody>
</table>

For ease of reporting five rating categories have been collapsed into three categories.
Skill set 2: text level reading and comprehension skills.

The respondents rated the number of students that they thought were struggling with the following text level reading and comprehension skills: (a) reading textbooks, (b) reading for meaning, (c) finding main ideas, and (d) finding details.

A range of 42% to 48% of respondents believed that none or a few of their students had difficulties with text level reading and comprehension skills (see Figure 3). However, 34% to 38% believed that half of their students had difficulty with all four text level reading and comprehension skills. Of this number, 16% (n = 16) believed that most or all of their students had difficulty finding main ideas, and 20% to 21% believed that most or all of their students had difficulty reading textbooks, reading for meaning and finding details. These findings are not surprising, as broad national assessments such as the US National Assessment Education Program (NAEP), and the BC Foundation Skills Assessment have shown that many students reach secondary school without the requisite comprehension skills needed to read content texts across the curriculum.
Skill set 3: critical reading skills.

The respondents rated the number of students that they believed struggled with the following critical reading skills (a) reading questions, (b) answering questions, (c) making judgments, (d) making inferences, (e) finding themes, and (f) problem solving. Problem solving was included in this category because it involves both analysis (what to look for) and inference (how to think about what you find), and these skills apply to all subject areas.

As Figure 4 shows, respondents' perceptions were that students had difficulty with both critical reading skills and basic text level reading skills. Thirty percent (n = 31) of the respondents thought that half of their students had difficulty reading questions, compared to 13% (n = 13) who thought that most or all had difficulty.
Thirty-nine percent (n = 41) thought that half of their students had difficulty answering questions, compared to 9% (n = 9) who thought that most or all had difficulty.

A range of 24% to 39% of the respondents thought that half, most or all of their students had difficulty making judgments and inferences, and slightly fewer, 23% to 35%, thought that half, most or all had difficulty finding themes. Thirty-seven percent (n = 38) thought that half of their students had difficulty problem solving, compared to 18% (n = 18) who thought that most or all had difficulty.

**Figure 4:** Respondents’ perceptions of the percentage of students struggling with critical reading skills.

For ease of reporting the five categories have been collapsed into three categories.
Skill set 4: graphic aids.

Respondents rated the number of their students who struggled with the following graphic skills (a) creating tables, (b) interpreting tables, (c) creating graphs, and (d) interpreting graphs.

As Figure 5 shows, respondents' opinions were divided about the proportion of students who had difficulty with graphic aids. An average of 56% thought that about half, most or all of their students had difficulty with graphic aids, compared to 45% who thought that none or a few had difficulty. Fifty-six percent (n = 52) of the respondents thought that half, most or all had difficulty creating tables, compared to 44% (n = 41) who thought that none or a few students had difficulty. Fifty-nine percent (n = 57) thought that half, most or all of their students had difficulty interpreting tables, compared to 41% (n = 40) who thought that none or a few had difficulty. Fifty-three percent (n = 50) thought that half, most or all had difficulty creating graphs, compared to forty-seven percent (n = 44) who thought that none or a few had difficulty. Fifty-seven percent (n = 51) thought that half, most or all had difficulty interpreting graphs, compared to 43% (n = 38) who thought that none or a few had difficulty.
Figure 5: Respondents' perceptions of the percentage of students struggling with graphic aids.

![Students Struggling With Graphic Aids]

For ease of reporting the five categories have been collapsed into three categories.

Skill set 5: basic study skills.

Respondents rated the number of students who struggled with the following basic study skills (a) understanding written directions, (b) following written directions, (c) notetaking, and (d) studying and test taking. As Figure 6 shows, respondents were almost equally divided about students' difficulties with study skills. Slightly more than 50% thought that about half, most or all of their students had difficulty with all of the basic study skills.
Respondents expressed concerns about students' difficulties with reading and comprehension skills. Several comments were about specific comprehension difficulties (a) fluency, (b) slow reading pace, (c) tracking, (d) reading for a purpose, (e) reading text for main ideas, (f) reading for connections and deep understanding, and (g) strategic reading. Other comments were from respondents who taught Applied Skills, English, Fine Arts, Mathematics, Modern Languages, Physical Education, Technology, or held positions for the following special educational initiatives (a) Inclusion Services, (b) Resource Services, (c) Special Education Support, and (d) Special Advocacy. Some of these comments were:
1. Technical manuals are hard to read and comprehend (Technology).

2. ESL issues, difficulty with blueprints and technical drawing (Applied Skills).

3. A few students had difficulty understanding rhythmic music concepts (Fine Arts).

4. Students generally can find information, but organizing the information they find and making inferences from it is difficult. They often ignore illustrations (Resource Services).

5. Taking notes, reading textbooks, finding themes, making inferences, creating tables, interpreting tables, interpreting graphs are N/A [not applicable in their discipline] (Physical Education).

**Students’ Literacy Development**

Respondents provided a multitude of opinions about what causes impediments to students’ successful literacy development. Based upon the nature of one hundred and thirty-three comments, the following themes were identified (a) early literacy learning, (b) cultural/linguistic backgrounds, (c) reluctant/non-readers, (d) home environment, (e) learning disabilities/behavior, (f) multimedia/technology, and (g) teaching and strategy instruction.

One hundred and nineteen of the comments were about out-of-school factors that had impeded students’ literacy learning. Of these, eleven comments about students’ early literacy learning suggested causes including (a) frequent school disruptions, (b) basic fundamentals missed, (c) students passed without being able to read at grade level, and (d) teacher–student ratio. Twenty-eight of the comments about students’ cultural and linguistic backgrounds suggested that the respondents
believed that ESL students' difficulties were largely related to (a) language issues, (b) different cultural attitudes toward reading, (c) not speaking or reading English at home, (d) the student being too recently arrived to assimilate instruction, and (e) not enough individual attention before placement into regular classes.

The respondents' comments about reluctant or non-readers suggested causes such as lack of practice, interest, motivation, too much TV watching or video game-playing and involvement in extra-curricular activities. Other statements about students "being perceived as 'meatheads' because their interests are not cerebral", and "for boys, it is cool to be stupid and not read", imply that adolescents can be negatively influenced by peer opinion and pressure.

Twenty-two comments about students’ home environment laid blame for poor literacy success upon causes such as (a) lack of parental support, (b) lack of role modeling, (c) lack of reading material in the home, and (d) ESL and cultural issues. Only twelve of the comments laid blame for poor literacy development on students’ learning disabilities or behavior. Eighteen comments were about the negative impact of the following media and technology on a students’ literacy development (a) TV, (b) cell phones, (c) e-mail, (d) computers, and (d) video games. Only fourteen comments were associated with teaching, content reading and strategy instruction, and schools. A samplings of these respondents’ opinions showed that there were concerns about (a) the lack of resources, (b) inconsistent strategies from teacher to teacher, (c) class sizes, (d) lack of sustained support across the curriculum, and (e) so much emphasis on testing plus preparing for tests. Only one respondent
commented, “can’t say”. One rather curious response, “absences of research validated instruction/curriculum since primary”, suggested a lack of familiarity with research findings and the large body of knowledge about reading, strategy instruction and adolescent learning that has been available over the last three decades (Lankshear and Knobel, 2003).

Summary of Respondents’ Opinions About Struggling Readers

This second section contained a discussion of respondents’ perceptions of the number of struggling readers in their classes and their difficulties with reading and comprehension skills. Respondents’ perceptions were that almost all of their struggling students were male. They also indicated that a substantial number of students in the junior secondary grades struggled with literacy skills, but fewer struggled in the senior grades. It is of interest to note that results from the British Columbia Ministry of Education’s tests on reading with grades four, seven, and ten often illustrate that about 25% of students do not meet the British Columbia Foundation Skills Assessment standards.

About 25% of respondents thought that half or more of their students had difficulty with phonics and 13% thought that fewer students had difficulties with knowledge of letters and associated sounds. Over 50% of respondents thought that students had difficulty with text-level reading skills. Only slightly less than 50% thought students had difficulty with critical reading skills. An average of 57% of the respondents thought that half, most or all struggled with the graphic aids. About 50% thought that half or more had difficulty with the basic study skills. It is important to note that respondents perceived the main impediments to students’ successful
literacy development to be external factors, not factors related to their own teaching or the school. Respondents identified external factors as (a) early literacy learning, (b) cultural/linguistic backgrounds, (c) reluctant and non-readers, (d) home environment, (e) learning disabilities/behavior, (f) multimedia and technology, and (g) strategy instruction. School-related factors included (a) lack of resources, (b) inconsistent strategies from teacher to teacher, (c) class sizes, (d) lack of sustained support across the curriculum, and (e) the emphasis on testing plus preparing for tests.

**Assessment and Evaluation Techniques**

The third section consists of an analysis of the respondents' experiences using assessment and evaluation techniques to assess students' reading abilities, needs and skills. The discussion includes the information provided to respondents by the schools about: (a) students' instructional reading levels; (b) competence with literal, inferential and critical levels of comprehension; and (c) study techniques. The techniques respondents indicated they used to assess and evaluate students' reading needs, abilities, and skills will also be discussed.

**Student Information Provided by Schools**

As Figure 7 illustrates, a range of 28% to 55% of the respondents reported that they received some kind of student information from their school. Fifty-five percent (n = 54) of respondents reported that they received information about students' instructional reading levels, while 42% (n = 37) received information about students' study techniques. Forty percent received information about students' vocabulary strategies and their literal levels of comprehension, 35% (n = 30)
received information about students' critical levels of comprehension, and 31% (n = 27) received information about students' inferential levels of comprehension. Slightly fewer, 30% (n = 26) and 28% (n = 23) respectively, were given information about students' subject background knowledge, interests and attitudes.

**Figure 7:** Percentage of respondents who received students' school information.

![Bar chart showing percentage of respondents who received different types of student information](chart.png)

Comments from seventeen respondents indicated that some or all of this type of information is available in the schools. One respondent stated “most of the information I receive is only about students who are having problems in the academic subjects and have behavior problems I should know about”. Another respondent commented “all of this occurs only if the Ministry numbers the student as learning disabled”. A third respondent observed, “these may be available but
teachers need to ask and access confidential student files to see whether these bits of student information exist. A fourth respondent stated, "information is available from counselors". Others statements about information available were "only with previously identified students" and "yes, but it is subject-specific too frequently."

Some departments shared information with teachers as is indicated by the following four statements:

1. We in Special Education help assess all grade 8 students' reading levels.
2. I am one of the people determining and providing this information to others in student profiles outlining needs and abilities.
3. I provide others with the information they need through school-based testing.
4. This is a major part of my job as Department Head. I work in collaboration with my colleagues.

**Assessment Techniques**

The assessment techniques most frequently reported by respondents (see Figure 8) were (a) observation, (b) teacher assessment, and (c) individual assignments. Eighty-nine percent, 81% and 76% of the respondents respectively used these three techniques most frequently. Standardized tests were used by 45% of the respondents, and student records and student self-assessment were used by 33% and 36% respectively. Only a small percentage of respondents used content area reading inventories (22%), informal reading Inventories (21%) and cloze tests (17%).
Figure 8: Percentage of various assessment techniques used by respondents.

Respondents also provided insight into a variety of additional direct assessment techniques they used. These techniques included essays, oral readings, performances, projects, quizzes and tape tests. A few respondents indicated that the assessment techniques listed on the survey were not applicable, or did not apply to them. One telling response was "I don't, as teaching reading isn't a formal part of my teaching area (other than vocabulary) so it is unfair to assess their abilities for a mark".

Summary of Assessment and Evaluation

This third section reported the responses to questions regarding the student information that schools provided to teachers. About one sixth to one half of the
respondents received information, and most of the information was general information about students’ instructional reading levels, study techniques, vocabulary strategies and literal comprehension. Fewer received information about students’ inferential comprehension, subject background knowledge, and interests and attitudes.

Respondents used (a) observation, (b) teacher assessment, and (c) individual assignments techniques most frequently to assess and evaluate students’ reading abilities and skills. Only an average of 38% of respondents used standardized tests, student self-assessment and student records. Fewer still, 20%, used content area reading inventories, informal reading inventories and cloze tests. It is notable that a range of 76% to 89% of the respondents indicated that the assessment and evaluation techniques they used to assess students’ reading skills and abilities were subjective. Only a small percentage, 17% to 22%, used informal reading inventories, content area reading inventories and cloze tests.

**Instructional Methods, Strategies and Resources**

The fourth section consists of the results of an analysis of respondents’ reported involvement with content area reading instruction to help students learn from text. The following is discussed (a) grouping methods, (b) instructional formats, (c) instructional strategies, (d) instructional resources and aids, (e) text structures, and (f) out-of-school reading.

**Grouping Methods**

Respondents indicated their use of (a) whole class instruction, (b) small group settings (3-5 students), (c) pairs, (d) one-to-one, and (e) large group settings (half
Whole class instruction was the most preferred method, and was used often by 71% (n = 77) of respondents and sometimes by 21% (n = 23). Small group settings (3-5 students) were used often by 59% (n = 64) and sometimes by 33% (n = 38). Pairs were used often by 53% (n = 56) of the respondents and sometimes by 38% (n = 40). These three grouping methods were rarely or never used by less than 10% of the respondents. One-to-one instruction and large group (half class) instruction were the two least preferred methods. One-to-one instruction was rarely or never used by 27% (n = 29) of the respondents, and large group instruction was rarely or never used by 40% (n = 41).

Figure 9: Percentage of respondents who used various grouping methods.
Instructional Formats

Respondents rated the types of instructional formats they preferred to use in their teaching (a) transactional strategy instruction, (b) lecture/discussion, (c) lecture, (d) reciprocal teaching, and (e) peer/group teaching. Respondents also had the option of describing other instructional formats they used.

Simple descriptions of two cognitive training approaches, transactional strategy instruction and reciprocal teaching, were included on the questionnaire in order to assess the specific types of instructional formats teachers might be using. Transactional strategy instruction (TSI) was described on the questionnaire as explanation, modeling, and guided practice (Pressley, Burkell, Cariglia-Bull, Lysynchuk, McGoldrick, et al., 1990). Reciprocal teaching was described as summarizing, questioning, clarifying and predicting (Palincsar, 1984, 1985, 1986; Tierney & Readence, 2000). As Figure 10 shows, based on the descriptions of these two approaches, 59% (n = 65) of the respondents indicated that they used transactional strategy instruction most often, and 33% (n = 37) indicated that they used it sometimes. Lecture with discussion, a traditional approach, was used most often by 51% (n = 57) of respondents and used sometimes by 33% (n = 37). Reciprocal teaching and the traditional lecture instructional approach were each used often by 30% (n = 32) of respondents and used sometimes by 42% (n = 45) and 38% (n = 41) respectively. Peer/group instruction, which became a popular instructional practice in the 1990s (Berne & Clark, 2006), was the least used instructional format, used often by 21% (n = 23) and sometimes by 55% (n = 59).
For ease of reporting the five rating categories have been collapsed into 3 categories,

It is important to note that the respondents may have relied on the simple
descriptions provided on the questionnaire for transactional strategy instruction and
reciprocal teaching. There is no evidence that these terms were used in the ways outlined
in research reports and other publications. In fact, respondents' comments suggested that
there was some confusion over what was meant by instructional formats. This was
apparent because of activities they suggested such as "lots of chalk talk, dictation, guided
practice, role-playing and demonstrations" that would be used with some of these formats.

**Use of Instructional Strategies**

Three types of above the word level comprehension activities, described as
"dual approaches" by Pressley and Wharton-McDonald (1970), have been identified
in the literature (a) prereading activities, (b) during reading activities, and (c) postreading activities (Vacca & Vacca, 2000; Tierney & Readence, 2000, 2005). For the purpose of this dissertation, activities that apply to all three categories have been labeled as 'all purpose strategies'.

With the exception of the use of graphic organizers, all other instructional strategies listed on the questionnaire were used by fewer than 50% of the respondents (see Figure 11). The three most frequently used strategies were graphic organizers (56%, n = 50), vocabulary instruction, and the all purpose strategy referred to as Directed Reading-Thinking Activities (39%, n = 35).

Approximately one-third (34%, n = 30) of the respondents used the Prereading Plan (PREP) strategy and 28% (n = 25) used the Anticipation Guide prereading strategy. The two least used strategies were the K-W-L procedure (26%, n = 23) and the Think-aloud procedure (20%, n = 18).

Seven respondents indicated that the use of instructional strategies to teach reading comprehension “did not apply” or was “not applicable” to them. Three other comments from respondents were (a) “I don’t teach reading”, (b) “I don’t teach reading comprehension”, and (c) “do not teach reading skills”. One respondent stated that the use of instructional strategies is “Not a big part of what I do, students learn by doing”. Other comments were queries that suggested a lack of knowledge about reading instruction. These queries included (a) “Don’t know what all of these are”, (b) “Would this include instruction sheets with patterns?”, and (c) “Would this include detailed instruction for a particular task? I.e. changing a zipper foot".
It appears from these responses that there is some, but relatively little, awareness and use of a variety of common literacy instructional strategies by teachers at the secondary level. About half of the respondents seemed to be using graphic organizers and vocabulary strategies but less seemed to be using study supports strategies such as the directed reading thinking activities, the prereading plan and the anticipation guide.

**Figure 11:** Percentage of respondents who used various instructional strategies.

---

**Use of Instructional Resources**

Respondents rated the types of instructional resources they used in their teaching and some added descriptions of other resources they used. Teacher prepared material and textbooks were both rated the most used by the majority of the respondents. As Figure 12 shows, teacher prepared material was used often by 75% (n = 85) of respondents, sometimes by 22% (n = 25) and never or rarely by 4% (n = 4). In comparison, textbooks were used often by 54% (n = 59), sometimes by 22% (n = 24) and rarely or never by 25% (n = 27).
In comparing the use of the Internet, videos and tape-book combinations, respondents indicated that the Internet was the most used of the three, and tape-book combinations were the least used. The Internet was used often by 26% (n = 29) of the respondents, sometimes by 51% (n = 56) and rarely or never by 23% (n = 25). Videos were often used by 16% (n = 18) of respondents, sometimes by 46% (n = 52) and rarely or never by 38% (n = 43). Tape-book combinations were the least used of the three listening-reading resources. They were used often by only 7% (n = 7) of the respondents, sometimes by 11% (n = 11) and rarely or never by 83% (n = 87).

Findings for respondent use of reading guides and study guides were somewhat similar. Reading guides were used sometimes or often by 39% (n = 40) of the respondents, and rarely or never by 62% (n = 64). Study guides were used sometimes or often by 45% (n = 48) of the respondents and rarely or never by 55% (n = 59).

Respondents used school library materials much more often than they used public library material. School library material was used sometimes or often by 65% (n = 71) of the respondents and rarely or never by 36% (n = 39). The use of public library material was the opposite. Public library material was only used sometimes or often by 31% (n = 33) and rarely or never used by 69% (n = 74). Only 1% of the respondents used interlibrary loans or borrowed from other schools.

Respondents also identified a host of other instructional resources they used in their classes. A sampling of these resources included (a) magazines, (b) technical periodicals, (c) newspaper articles, (d) classroom resource material, (e) modified
and adapted materials in all content areas, (f) photocopied chapters from a variety of books and textbooks, (g) games, and (h) guest speakers. The use of several types of technology was also given, including CD, DVD, Search engine, online tutorials, video laser, and video laser discs.

**Figure 12:** Percentage of respondents who used various instructional resources.

![Instructional Resources](image)

For ease of reporting the five rating categories have been collapsed into three categories.

Respondents selected all of the instructional aids they preferred to use: (a) adjunct aids (tables, charts, diagrams, lists, maps, etc.); (b) blackboard; (c) overhead projector; and (d) PowerPoint. They also had the open-ended option of specifying other instructional aids.

As Figure 13 shows, with the exception of PowerPoint there was very little difference in the numbers or percentage of respondents using the four items given
on the questionnaire. Eighty-two percent (n = 92) of the respondents used the blackboard, 79% (n = 88) used the overhead projector and 75% (n = 84) used adjunct aids.

**Figure 13:** Percentage of respondents who used instructional aids.

<table>
<thead>
<tr>
<th>Instructional Aids</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackboard</td>
<td>82</td>
</tr>
<tr>
<td>Overhead projector</td>
<td>79</td>
</tr>
<tr>
<td>Adjunct aids</td>
<td>75</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>60</td>
</tr>
</tbody>
</table>

**Types of Text Structures**

Respondents rated how frequently they provided instruction in reading text structures (a) narrative, (b) expository, and (c) documents, a special type of expository text (Hock & Mellard, 2005). To avoid confusion, the term *text structures* will be used in this discussion instead of the term *formats*, which was used previously in this chapter in the discussion of instructional formats.

Only a small proportion of respondents (see Figure 14) provided instruction on these text structures. In general, respondents provided more instruction on reading expository text and documents than they spent on narrative text. Twenty-one percent (n = 22) taught about expository text nearly every day, and 20% (n = 21)
taught about documents nearly every day. Twenty-five percent (n = 26) taught about reading documents about once a month. In comparison, 21% (n = 21) of respondents taught about reading narrative text about once a month and 22% (n = 22) taught about it at least once a week. Thirty-one percent (n = 31) never taught about reading narrative text, 20% (n = 21) never taught about reading expository text, and 8% (n = 8) never taught about reading documents. These responses about the lack of instruction of narrative text, expository text, or documents may be a reflection of the respondents' subject area and the type of texts used in that area.

Several respondents indicated that they instructed students on reading other types of text such as poetry, film (as text), music sheets, scripts and writing scripts, short descriptive articles, and authentic documents and dialogues.

Figure 14: Percentage of respondents who provided instruction on the use of text structures.
**Out-of-School Reading**

Respondents rated how frequently they encouraged their students to read (a) books, (b) newspapers, (c) magazines, (e) websites, and (e) coursework outside of school (see Figure 15). They also rated how frequently they discussed the material read. Forty percent (n = 42) encouraged students to read coursework out-of-school almost every day, and 26% (n = 27) encouraged it weekly. Other than that, the respondents did not encourage students to do a great deal of additional reading outside of school. On average, 13% never encouraged out-of-school reading. Somewhat more, 23%, encouraged out-of-school reading three or four times a year and 22% encouraged out-of-school reading about once a month.

Other than reading for courses, an average of 35% (n = 36) of the respondents encouraged students to read books and magazines three or four times a year. One-third of the respondents encouraged students to read books, newspapers, magazines or websites about once a month, and slightly less than one-third encouraged students to read books, newspapers, magazines or websites about 3 or four times a year. Teacher-student discussions about material read out-of-school were held nearly every day by 16% (n = 17) of the respondents, about once a week by 27% (n = 29), three or four times a year by 20% (n = 22) and once a month by 21% (n = 22). Discussions were never held by 16% (n = 17) of the respondents.
Figure 15: Percentage of respondents who encouraged out-of-school reading.

Summary of the Use of Instructional Methods, Strategies and Resources

The fourth section of this chapter consists of an analysis of findings about the types of (a) grouping methods, (b) instructional formats, (c) reading comprehension strategies, (d) instructional resources, and (e) instructional aid respondents used in their own content areas to help students learn from text. Included is a discussion of the findings about instruction on reading narrative and expository text and documents, and how frequently students are encouraged to read outside of school.

Whole class, small groups (3-5 students) and pairs were the most preferred instructional grouping methods and one-to-one and large group settings (half class) were the least preferred methods. Transactional strategy instruction and lecture/discussion were the two most preferred instructional formats used to teach
reading comprehension by the majority of respondents. Peer/group instruction, reciprocal teaching and the lecture format were used sometimes. As noted, there is no evidence that transactional strategy instruction and reciprocal teaching were used in the ways suggested in the literature. It is also noteworthy that less than one-third of the respondents answered this question. Graphic organizers, vocabulary instruction and Directed Reading Thinking Activities were the three instructional strategies used most frequently to teach reading comprehension. The majority of respondents used teacher prepared materials often for their teaching, about half used textbooks, and one quarter used the Internet. Only a small number of respondents provided reading instruction of narrative, expository and document text structures. In general, more instruction was given for expository and document text structures than for narrative text structures. Fewer than half of the respondents encouraged students to read for their courses outside of school almost every day and one-quarter encouraged it weekly. Other than that, students were given little encouragement to do a great deal of additional reading outside of school. Teacher-student discussions about material read outside of school were held infrequently or not at all.

**Instructional Programs and Special Services**

The fifth section of this chapter contains a discussion of the types of instructional programs and special services available for students experiencing reading difficulties. Respondents’ perceptions of factors impeding school-wide efforts to deliver content area reading programs are described, along with a discussion of the types of support services they would like to have for struggling readers.
Instructional Programs

Responses to the questionnaire showed that there were fewer instructional programs for students experiencing reading difficulties than there were special services programs. Of 109 responses, 84% (n = 92) indicated that their school had instructional programs for students with reading difficulties. It is notable that a high percentage of those who responded (94%), but fewer actual respondents (n = 88), indicated that their school has special services for students experiencing reading difficulties. This anomaly was caused by the fact that there were 25 missing responses for this question and one “Don’t know” response.

Additional comments indicated that some schools had designated spaces, personnel and programs to help students. Skills Centers and District Resource Centers are designated areas for programs that students can go to or be sent to for support blocks. One school had a location designated as a literacy lab, and some schools had specific programs or classes for students. A few examples of these were ESL classes, school wide daily silent reading and morning reading programs. Some schools used peer tutoring, and one school had grade 11 students reading to grade 8 students. Another school had learning guides for individual students’ needs. Some schools had specific programs for grades 8 and 9 students. One school had “a modified literacy program for grades 8, 9 and 10”. A second school had “grade 8 and grade 9 skills classes [that] pulled out students with difficulties for one term to focus on reading skills”. A third school had "a skills program course [which] used the Anita Archer program, a pre-testing and intervention project dedicated to Gr. 8 and grade 9 students".
Other respondents’ comments about programs showed that schools were making an effort to find ways to help struggling readers as the following indicate:

“We utilize a computer based literacy software program and have recently piloted a learning centre to address student needs”.

“We have organized after school and lunch tutorials”.

“We’ve embarked on a literacy program where we use reading strategies in class”.

“We are offering a basic literacy course at our school, but most of us are unaware who is eligible and what the course teaches”.

“Skills centre has a large focus on “How to read the book” for students with a scheduled skills block or “pull-out” from an elective”.

“We have a skills center and students that need extra help are offered a skill block in their timetable”.

**Special Services**

Descriptions of the types of instructional programs and special services respondents’ schools had for students experiencing reading difficulties included skill center programs, learning assistance centers, skill blocks, peer tutoring, homework clubs and district and school based resource teachers. In addition, two special programs, the Bridge program and Feuerstein’s instrumental enrichment program, were mentioned.

Seventy of the respondents’ comments referred to the need for greater teacher and student support, more and better resources, more time, and reduced class sizes. Sixteen of the comments referred to the need for more financial support and professional development. Only two respondents commented that support was available
in their schools and three commented that the need for support was not applicable or did not apply to them. As well, there were comments that referred to students’ reluctance to read, their use of computer technology, their need for home support and their need for better preparation at the elementary level.

There were also a number of telling comments about the situations in schools: (a) “the concept of adolescent literacy, ‘reading and writing to learn’, is new to the district and not yet well funded nor are general staff given the resources to support general reading/writing in all content areas”; (b) “we are developing a literacy program, but continued cuts to staff funding and the pressures of curriculum completion are hindrances”; (c) “the ‘school’ has begun addressing the growing number of struggling readers in every classroom, however, not all teachers/content areas have bought in”; (d) “I would like to see a school-wide emphasis on reading across the curriculum. All areas should focus on reading and writing skills”; and (e) “more encouragement for reading in general, less pressure to cover the content by a certain time etc. More flexibility in the class to focus on skills development”.

**School-Wide Content Area Reading Programs**

Over three quarters of the respondents (78%, n = 71) thought that there were factors that hindered efforts to deliver school wide content area reading programs or services in their schools (see Figure 16). These factors were: (a) lack of personnel to coordinate programs (65%, n = 46); (b) lack of financial support (63%, n = 45); (c) lack of in-service education (52%, n = 37); (d) lack of qualifications to guide students’ reading (44%, n = 31); and (e) lack of administrative support or leadership (16%, n = 11).
Almost half of the respondents (48%, n = 34) indicated that, in their view, teaching reading was not the responsibility of content teachers, and that such a program was not needed (4%, n = 3). Twenty-eight (n = 24%) respondents did not answer this question, and 22% (n = 20) did not think that there were factors that hindered the schoolwide efforts to deliver content reading programs or services in their schools.

Other reasons for the lack of school wide efforts to deliver content reading programs or services in schools were identified as (a) time and energy demands of the rest of the program, (b) cutbacks, (c) too much to do, (d) class size effects on one-to-one, (e) politics, and (f) very little parental support.
Summary of Instructional Programs and Services Available for Struggling Readers

The fifth section of this chapter contained a discussion of the types of instructional programs and special services schools had for students experiencing reading difficulties. Respondents' perceptions of factors impeding school-wide efforts to deliver content area reading programs or services are described, along with a discussion of the types of support services they would like to have for struggling readers. Although special services for students were more numerous than instructional programs, there was an apparent overlap between them. Delivery of schoolwide efforts to develop content area reading programs seemed to be hindered by the lack of (a) administrative support or leadership, (b) financial support, (c) personnel to coordinate programs, and (d) teacher qualifications to guide students' reading and in-service education. Two respondents also stated that reading was not the responsibility of content teachers and such a program was not needed.

In general, respondents suggested that there were several factors that hindered the development of schoolwide content area reading programs or services. Only 71 out of 119 respondents answered this question, and of those 48% (n = 34) indicated that they did not perceive content area reading to be part of their responsibility. This is interesting in light of the commonly held perception that secondary teachers are resistant to content area reading instruction (Ratekin, Simpson, Alderman, & Dishner, 1985), and that their priority is on teaching content, and not on teaching students how to read or learn the content.
Teacher Support and Content Area Reading Instruction Needs

The final section of this chapter describes respondents’ knowledge about content area reading and strategy instruction, and their levels of satisfaction with this knowledge. This will be followed by a discussion of the types of in-service programs they would like made available to them, and how often they attended in-service programs on reading in the years 2001-2004.

Knowledge and Satisfaction Levels

The frequency and percentage of responses about knowledge of content area reading and strategy instruction and satisfaction with their knowledge showed that 16% (n = 18) admitted to knowing nothing about content area reading and strategy instruction, 54% (n = 59) had some knowledge about content area reading and strategy instruction, and 30% (n = 33) considered that they knew a lot or everything about content area reading and strategy instruction (see Figure 17). Twenty-nine percent (n = 31) were very dissatisfied or somewhat dissatisfied with their knowledge, 37% (n = 40) were somewhat satisfied with their knowledge, and 34% (n = 37) were satisfied or very satisfied with their knowledge.
Figure 17a: Respondents' level of knowledge about teaching content area reading.

![Level of Knowledge of CAR](image)

Figure 17b: Respondents' level of satisfaction with their knowledge of content area reading.

![Level of Satisfaction with Knowledge](image)

In-service Programs

Thirty-two percent of respondents \((n = 35)\) had not attended an in-service program on reading during the years 2001-2004. Thirty-nine percent \((n = 42)\) had attended programs once or twice, and 29% \((n = 32)\) had attended three or more times (see Figure 18).
**Figure 18:** Percentage of times respondents reported attending in-service programs in the years 2001-2004.

---

**Teacher Attendance at Inservice Programs**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>35%</td>
</tr>
<tr>
<td>Once</td>
<td>30%</td>
</tr>
<tr>
<td>Twice</td>
<td>25%</td>
</tr>
<tr>
<td>Three or more</td>
<td>10%</td>
</tr>
</tbody>
</table>

---

**Identified Support Needs**

Respondents voiced a multitude of opinions about the types of support they would like to have in their classes or schools for struggling readers. These included (a) more attention paid to teachers’ and students’ needs, (b) increased resources, (c) changes to class size, (d) more time to work with students, (d) increased financial support, and (e) more professional development.

**In-service and Professional Development Programs**

Respondents indicated that they were interested in a range of in-service programs on content area reading (see Figure 19). Sixty-eight percent (n = 65) wanted in-service programs on developing comprehension skills. Fifty percent (n = 49) wanted programs on using writing, speaking, and listening in reading instruction, and differentiating instruction for different groups. Over 45% (n = 44) wanted
programs on diagnosing individual instructional needs and providing for the disabled reader in the classroom, and 41% (n = 40) wanted a program on developing reading goals and objectives. The least requested programs were using supplementary reading materials (38%, n = 37) and using the library effectively (29%, n=28).

**Figure 19:** Percentage of respondents who desired various in-service programs.

![Inservice Programs Graph](image)

**Summary of Teacher Support Needs**

A small percentage of respondents admitted to knowing nothing about content area reading, and about one-third were somewhat or very dissatisfied with their knowledge. About fifty percent had some knowledge and were somewhat satisfied with their knowledge. About one third considered that they knew a lot or everything about content area reading and were satisfied or very satisfied with this
knowledge. One-third of the respondents had not attended an in-service program on reading in the years 2001-2004, one-third had attended programs once or twice, and about one-third had attended programs three or more times. The most desired in-service programs were: (a) developing comprehension skills; (b) using writing, speaking and listening in reading instruction; (c) differentiating instruction for different groups; (d) diagnosing instructional needs; and (e) providing for disabled readers in the classroom. These results suggest that these educational leaders recognized the need for changes to improve students' literacy skills, the need for professional development for content area reading instruction at the secondary level, and for environments that sustain professional development and school reform initiatives.

Chapter Summary

Chapter four contained a discussion of responses to a self-administered mailed questionnaire entitled *Secondary Teachers' Perspectives on Adolescent Content Area Reading*. One hundred and nineteen secondary teachers in Western Canada who held leadership positions in specific curriculum areas or for educational initiatives in eighteen secondary schools completed and returned the questionnaire. Topics discussed were: (a) teacher demographics and worklife; (b) teachers' perceptions of struggling students; (c) assessment and evaluation techniques; (d) instructional methods, strategies and resources; (e) instructional programs and special services for struggling readers; and (f) teacher support needs.

The majority of the respondents, almost equally male and female, were between the ages of 41 to 60. Two thirds of the respondents had qualifications from
both within and outside a Faculty of Education, and their teaching experience was almost entirely at the secondary level. On average, respondents taught five subjects and 15 classes per week to 181 students. The average size of the smallest classes was 19 students and the average size of the largest classes was 30 students.

Respondents' perceptions about the students in their classes were that the majority of the struggling students were male. They reported that a substantial number of students in the first three years (grades 8-10) of secondary school struggled with their literacy skills, but fewer struggled in the senior grades. Around fifty percent of respondents believed that half, most or all of their students had difficulty with (a) text-level reading skills, (b) critical reading skills, (c) graphic skills, and (d) basic study skills. Respondents viewed external factors to be the major hindrances to students' successful literacy development, not factors about respondent's teaching or the school. These hindering factors were (a) early literacy learning, (b) cultural/linguistic backgrounds, (c) reluctant and non-readers, (d) home environment, (e) learning disabilities/behavior, and (f) multimedia and technology. School related hindrances included issues about (a) lack of resources, (b) inconsistent strategy instruction from teacher to teacher, (c) class sizes, (d) lack of sustained support across the curriculum, (e) the emphasis on testing plus preparing for tests, and (g) teaching strategy instruction.

The majority of respondents used observation, teacher assessment, and individual assignments to assess students' needs, abilities and skills. Less than half of the respondents used standardized tests, student self-assessment, and student
records, and a minority used content area reading inventories, informal reading inventories, and cloze tests.

Whole class, small groups (3-5 students) and pairs were the most preferred instructional grouping methods to help students learn from text, and one-to-one and large group settings (half class) were the least preferred methods. Transactional strategy instruction and lecture/discussion were the most preferred instructional formats used to teach reading comprehension, and peer/group instruction, reciprocal teaching and the lecture format were used sometimes. Graphic organizers, vocabulary instruction and Directed Reading Thinking Activities were the three instructional strategies used most frequently to teach reading comprehension.

The instructional resources used by the majority of respondents were teacher prepared materials, textbooks and the Internet. With the exception of the infrequent use of PowerPoint, the majority of respondents used the traditional instructional aids: (a) blackboards; (b) overhead projectors; and (c) adjunct aids (tables, charts, diagrams, lists, maps, etc). Fewer than half of the respondents encouraged students to read for their courses outside of school and discussions about material read outside of school were infrequent or not at all. Only a small number of respondents provided reading instruction for narrative, expository and document text structures. In general, more instruction was given for expository and document text structures than for narrative text structures. Less than half of the respondents encouraged their students to read outside of school almost every day and one-quarter encouraged it weekly. Other than that, students were given little encouragement to do a great deal of additional reading outside of school. Teacher-
student discussions about material read outside of school were held infrequently or not at all.

There were fewer instructional programs than special services for students experiencing reading difficulties. Some schools were making efforts to help struggling students and had designated spaces, personnel and programs. Several factors were impeding the development of schoolwide content area reading programs or services. These were the lack of (a) administrative support or leadership, (b) financial support, (c) personnel to coordinate programs, and (d) teacher qualifications to guide students' reading and in-service education. Two respondents also stated that reading was not the responsibility of content teachers and such a program was not needed. Forty-eight percent of the 71 respondents who answered this question did not perceive or acknowledge that content area reading was part of their responsibility.

About half of the respondents had some knowledge of content area reading and strategy instruction and were somewhat satisfied with this knowledge. About one-sixth of the respondents admitted to knowing nothing about content area reading and strategy instruction, and about one-third were somewhat or very dissatisfied with their knowledge. About one third considered that they knew a lot or everything about content area reading and were satisfied or very satisfied with this knowledge. One-third of the respondents had not attended an in-service program on reading in the years 2001-2004, one-third had attended programs once or twice, and about one-third had attended programs three or more times. The most desired in-service programs were: (a) developing comprehension skills; (b) using writing,
speaking and listening in reading instruction; (c) differentiating instruction for different groups; (d) diagnosing instructional needs; and (e) providing for disabled readers in the classroom.

It is clear that the respondents (teachers) in this study were generally experienced teachers; however, there was a limited knowledge of the role of content area reading within their disciplines. While they did recognize that many of their students struggle (particularly in grades 8 to 10), and particularly with comprehension and critical reading skills, they did not have the range of assessment tools necessary to evaluate students' needs. In fact, respondents tended to situate the problem in the students and their backgrounds, rather than in classroom instruction. They did note, however, that their schools lacked programming for struggling readers and expressed interest in having access to professional development. In chapter 5, the key issues emanating from these findings are discussed in relation to theory and research on content area reading and strategy instruction.
CHAPTER V
Discussion and Implications

This survey study of secondary teacher leaders was designed to investigate beliefs about, attitudes towards, and instructional practices related to content area reading. The goal of the study was to provide a contemporary portrait of content area reading in one large school district in order to understand the continuing challenges educators face in providing adolescents with reading instruction that supports their academic achievement.

This chapter includes a discussion of the findings in relation to theory and research, focusing on five major issues raised by the findings of this study: 1) Identification of "the struggling adolescent reader"; 2) Perceptions of why these readers struggle; 3) Issues related to the assessment of student needs in relation to content area reading; 4) Issues related to teacher knowledge of content area reading instruction; and 5) Implications for professional development and learning communities focused on adolescent content area reading.

Identifying Struggling Readers

Grade Levels of Struggling readers

Respondents in this study who answered this question identified the struggling readers as largely situated in the early years of secondary school - grades 8-10, indicating that the number of students who struggled with reading increased as they progressed from grades 8 through to 10, then decreased in grades 11 and 12. For instance, between 30 and 40% of respondents believed that up to 50% of their students in grades 8-10 struggled with reading, while the
percentage of respondents who believed this about grade 11 and 12 students was between 14 and 20%. These findings are not inconsistent with both research and popular media constructions of the adolescent struggling reader. Indeed, there is a growing body of literature about young adolescents who become at risk of school failure as they transition into secondary school and who may be in danger of dropping out of school.

Care needs to be taken in using the term "struggling" as it is a generic label that can refer to students who are “reluctant”, “at risk”, “disadvantaged”, “alienated”, “resistant”, or “educationally deprived” (Johannessen, 2004). The use of the label “struggling” in this study refers to those students who have difficulty reading across disciplines. Adolescents who struggle with reading may have difficulty in one or more areas, lack academic success, may feel a sense of alienation and are at risk of dropping out if their participation in school becomes marginal (Vacca & Padak, 1990). They are both students who are at risk of school failure and students who do not know how to use reading to learn (ibid).

Stanovich (1998) argued that struggling readers may be students experiencing a “Matthew Effect”, named after the Gospel according to St. Matthew, that illustrates the “rich get richer and the poor get poorer” phenomenon; that is, students who have advantageous early experiences are able to utilize new educational experiences more efficiently. In reading, this can be translated to the gap between learners who experience difficulty in the early grades and their academic success and the experiences of those who succeed, and this gap widens as they progress through school.
National longitudinal data in the United States show that three quarters of
students who exit third grade as struggling readers continue to read poorly in high
school (Rand Reading Study Group, 2002). They may be students whose third grade
achievement was low, or they may be students whose third grade achievement had
been high but whose “late-emerging reading deficits” were not identified (Leach &
Hollis, 2003). Students such as these may go undetected until a time when reading
tasks became more difficult for them; that is, when reading within content areas
becomes crucial to academic success. Kamil (2003) reported that findings from the
2002 National Assessment of Educational Progress (NAEP) confirmed teachers’
perceptions that many students who read well enough in primary grades experienced
reading difficulties thereafter. Students such as these may fall into a non-designated
category of “grey-area students” (Sparks, Myrtle, & Fewster, 2002).

These struggling readers may be adolescents who experienced what some
educators have referred to as a fourth grade slump (Chall, 1983). The notion of the
fourth grade slump, or what Chall (1992) called the “learn to read, read to learn
divide,” is one in which children “learn to read” in the primary grades and thereafter
they are expected to “read to learn”. While this dichotomy has been questioned
(i.e. many would argue that children read to learn from their earliest print
experiences), research does indicate that many students who read at grade level
in grade 3 will not automatically become proficient comprehenders in later grades
(Biancarosa & Snow, 2004).

At this learning stage, around the fourth grade, some children lose interest
in reading, a problem that appears to affect more boys than girls, but can affect
any child (Kropp, 1993). The Rand Reading Study Group (2000) reported that students in the sixth grade and beyond come to school with a wider range of literacy skills than students in the earlier grades. As students get older, they may also experience what has been termed the "eighth grade reading cliff" when they begin secondary school (Trehearne, 2005). Many students experience difficulties transitioning from children's stories read in the earlier grades to reading more complex content area textbooks in middle and high school (Snow, 2002). The Carnegie Corporation of New York (2006) addressed this issue:

Students in the middle and high school grades can be overwhelmed by the multiple comprehension demands of the various contents. Moving from science, to social studies, to mathematics, to English language arts, and then foreign language and arts classes, students can more easily slip through the literacy "cracks," with no single teacher being able to monitor student progress across a full day or to provide consistent accommodations and literacy support (p. 42).

This hypothesis is borne out in the assessment data in British Columbia, where the school district of this study is situated. As noted in chapter 1, results from the BC Foundations Skills Assessment tests in grades 4, 7 and 10 indicated that about 25% of students in British Columbia did not meet BC performance standards for reading (BC Ministry of Education, 2001). As noted by Rogers, Winters, Bryan, Price, McCormick, House et al. (2006), these findings have remained fairly consistent; they also noted that anecdotal accounts from teachers in their study of intermediate and secondary literacy assessments indicated that many of their
students struggled to comprehend texts across the curriculum. These data mirror many other studies that point to approximately 25% of students who reach secondary school without the requisite reading skills to handle academic work. Sparks, Myrtle and Fewster (2006) noted that while 10% of struggling students are special needs students, another 20% percent of the 640,000 students in the BC public schools are in the “grey area”: they are not identified as having special needs, but are not meeting expectations in reading.

While this is fewer students than are identified by the teachers in this study (more than 50% of teachers indicated that they believed more than 25% of students in grades 8-10 were struggling readers), there is a clear convergence of theory and research that illustrates a concern about a sizeable number of struggling readers who are challenged by the secondary academic curriculum. The higher number of students identified as struggling in this study could be attributed to a number of factors. For instance, Sparks, Myrtle and Fewster (2006) reported that the BC classrooms have a diverse population of students from varied socio-economic and cultural backgrounds, students whose first language is not English, and students with a variety of (differentiated) learning needs. This may be even more pronounced in an urban district such as the one in this study. Indeed, in this study teachers listed a range of such hindering factors.

Regardless of the actual number, many of these vulnerable grey-area students are the type of students who fall through the cracks and may experience academic failure. They are representative of the type of student who does not have the literacy skills to keep up with the high school curriculum, which has become
increasingly complex (Kamil, 2003; Biancarosa & Snow, 2004). Struggling readers may use a range of coping strategies in content area classrooms, such as: (a) avoiding eye contact, (b) engaging in disruptive behavior, (c) becoming a good listener, (d) relying on a classmate or other good reader, (e) seeking help from a friend, (f) forgetting books and other materials, and (g) using manipulative techniques to gain teachers’ positive perceptions (Brozo, 1990).

**Gender of struggling students**

Almost all of the respondents indicated that the struggling students in their classes were male and, as noted above, the struggling readers were perceived to be situated in grades 8 through 10. This perspective that focuses primarily on males as struggling students mirrors the popular perception driven by the media that not only some, but also almost all, of the low achievers on tests are male. It is likely that teacher leaders’ perceptions that 97% of the struggling students were male also reflects the influence of the popular press and the recent reportage in the educational field. However, when I look at differences in performances between males and females in measures such as the FSA the ratio difference is much lower. Taylor (2005) pointed out that this emphasis on boys in the literature and media does not mean that it happens to all boys, or that it does not happen to girls.

This sense of a "crisis" related to boys and literacy and the gender gap has been investigated by researchers from a variety of perspectives such as behavior, cognitive ability, school achievement, attitudes, interests, reading habits, motivation, participation course taking and test taking. However, when *Gender issues in literacy* appeared on the IRA’s annual “What’s Hot What’s Not” list of trends for the first time
in 2002/2003 it was rated "not hot" and "should not be hot", and this rating continued through to 2005/2006. Some researchers (e.g. Rowan, Knoble, Bigum, and Lankshear, 2002) would argue that the issue is more complex than assuming boys lack literacy achievement because of their gender as biologically defined; for instance, one argument is that schools reinforce gender differences in a range of schooling and literacy practices.

Whether or not the gender gap in literacy is actually a "crisis," and what its origins or causes are, issues of literacy for all students need to be considered and improved upon, including broadening the definition of literacy to include, for instance, a consideration of students' literacy practices outside of schools. Many students are experiencing considerable intellectual accomplishments in many ways through out-of-school literacies, but as Hull and Schultz (2001) noted only school literacy is valued while out-of-school literacies remain sub rosa.

**Perceptions Of Why Readers Struggle**

Over one-third of the respondents in this study indicated that half of their struggling readers had difficulty with (a) text level reading and comprehension skills, (b) critical reading skills, (c) graphic aids, and (d) basic study skills. When responses were combined, nearly two-thirds of the respondents indicated that their students had some difficulty with text level reading and critical reading skills, and slightly fewer than half of the respondents indicated that students had difficulty with graphic aids and basic study skills.

There is no concise answer or simple solution to the complex problem of why so many adolescents struggle to read academic texts (Tovani, 2000). Snow, Burns
and Griffin (1999) asserted that reading problems would be prevented if students were given appropriate instruction in three areas (a) knowledge of the alphabetic principle, (b) fluency, and (c) comprehension. Although few adolescents need further instruction in phonics or decoding skills (Ivey & Baker, 2004), some researchers argue that fluency and higher order reading skills, such as vocabulary development and comprehension, are dependent upon accurate context free word recognition (Stanovich, 1991).

**Fluency**

Recent research by classroom teachers found that the lack of reading fluency appears to be a key factor in reading success because students had not yet developed the fluency necessary to read at an appropriate level. In a study with grade 9 students, Rasinski et al. (2005) found that reading fluency was a significant variable in secondary students’ reading and overall academic development, and should be a concern for teachers at all grade levels. Two types of recommended intervention reading techniques that provide practice reading out loud have been shown to improve fluency and comprehension. The first is repeated reading techniques, which are effective in improving fluency as measured by rate in both older and younger readers (Dowhower, 1994; Samuels, 2002). The second is collaborative oral reading, or popcorn reading (Curtis, 2004), which works similarly to repeated reading.

**Word Recognition and Vocabulary**

Another reason that students struggle is that they lack the necessary vocabulary to read academic texts. Graves and Watts-Taffe (2004) pointed out that
a great deal is known about vocabulary and vocabulary instruction, the important role it plays in reading, and in other aspects of schooling, and the outside world. Graves (2004) asserted that vocabulary instruction has always been of interest to middle and high school teachers, likely because they recognize the importance of vocabulary in their specialized fields of study and are familiar with instructional methods. However, in his opinion the vocabulary instruction adolescents receive often consists of teaching the meaning of a small number of difficult words that come up in the selection to be read. He asserted that this type of instruction negates the research on vocabulary that has shown that the single most important factor to consider in planning instruction is that the task of learning vocabulary is central to understanding texts and developing conceptual understanding.

Comprehension

As noted earlier, Huey (1908) first drew attention to the issue of reading comprehension, although the use of the term did not occur until the middle of the twentieth century. It became a focus of instructional research in the 1980s, spurred in part by Durkin's key study of reading instruction in which she illustrated that most instruction was the assessment of comprehension, rather than teaching of skills and strategies (Durkin, 1979). With this history, the lack of attention to teaching comprehension at the secondary level is not surprising, especially in light of the fact that there are misconceptions about whose responsibility it is, the lack of understanding about how to teach and use strategies, and barriers and resistance by secondary teachers to accepting this as part of their responsibility (Bintz, 1997; Kamil, 2003; Wellman & Wold, 2006).
In this study about half of the respondents reported that their students were experiencing difficulty with text level and critical reading comprehension skills and graphic aids and closely interrelated problem solving and study skills. Underwood and Pearson (2004) pointed out that it is an unfortunate fact that the majority of adolescent readers in American schools routinely struggle when faced with the task of comprehending what they read as part of their academic assignments. Pressley (2001) maintained that too little comprehension instruction is occurring in schools in spite of the fact that much is known about what good readers do (Duke & Pearson, 2002), and about effective comprehension instruction (Jetton & Alexander, 2004; Pressley, 2000, 2001). The use of a variety of validated comprehension strategies have been shown to be effective (Tierney & Readence, 1985, 1990, 1995, 2000, 2005), and these strategies are being used by some secondary teachers (Barry, 2002; Laverick, 2002). As well, teachers in different domains such as vocational (Darvin, 2006), physical education (Marlett and Gordon, 2004), mathematics (Draper, 2002), and social studies (Massey and Heafner, 2004) appear to be beginning to embrace strategy instruction. Teachers are now beginning to recognize the worth of teaching domain specific content reading strategies for comprehension, which Vacca (2002) referred to as the visible dimensions of content area reading.

**Assessment of Student Needs In Relation to Content Area Reading**

Afflerbach (2004) asserted that adolescent reading and learning is developmental and involves the use of skills, strategies and prior knowledge to construct meaning from text, and reflect on the information gained within content domains. Assessment of students’ learning and reading involves understanding how
students are learning content and how they are using reading strategies to process new information.

Three formative classroom assessment techniques were reported in my study as most frequently used to assess students' reading needs, skills and abilities (a) observation, (b) teacher assessment, and (c) evaluating individual assignments. Standardized test results and student records were relied upon for information by less than one half of the respondents. It is not known from these findings what standardized tests were used, when they were administered and what other student records were accessed. Student self-assessment was used by about one-third of respondents, and only about one-fifth of the respondents used informal reading inventories, content reading inventories and Cloze tests to assess their students' abilities to understand, interpret and use subject matter texts.

In theory, teacher assessment and evaluation of individual assignments, along with close teacher observation of the students that focuses on the processes of learning and student self-assessment, would benefit students learning in content areas. These forms of assessment are mutually beneficial in terms of helping teachers and students monitor understanding, interpretation and use of domain specific subject matter text. It also has the potential to increase dialogue between the teacher and students in the classroom community. However, Phelps and Weaver (1999) cautioned that "even though the discourse of the classroom may overtly welcome the participation of all, students' ability to safely speak will be determined by their relations with peers, with the teacher, and within the social setting of the school and the larger community" (p. 323).
These types of formative ongoing classroom assessment approaches can be more beneficial for teachers and students than the commercially prepared large scale evaluative standardized tests that can sometimes label or pigeonhole students. Formative assessment is learning-centered in that the primary focus is on observing and improving students' learning, rather than observing and improving teaching practices. They are teacher-directed, giving individual teachers autonomy as to what to assess, how to assess and how to provide feedback to their students. They are domain specific in that they apply to the particular needs of the teachers and the students (Angelo and Cross, 1993), and enable teachers to draw some conclusions about their students' strengths and needs in relation to learning to read and reading to learn, and in relation to their topic knowledge within a specific content domain (Afflerbach, 2004; Jetton & Dole, 2004). In addition, these assessment techniques can be valuable because teachers can monitor and reflect on their own practices as well as their students' proficiency in reading to learn. Biancarosa and Snow (2004) pointed out “the best instructional improvements are informed by ongoing assessment of students' strengths and needs” (p. 19).

Respondents reported that they were given information about their students from standardized tests, school records, and formative assessment techniques. Just over half reported that they gained information from the school about students' instructional reading levels, however fewer than half received school information about students' (a) vocabulary strategies, (b) comprehension skills, (c) subject background knowledge, (d) interests and attitudes, and (e) study techniques. These findings indicate that a close-up view of students' reading was missing for these
respondents, which is significant in light of the literature that highlights their importance for assessment and instructional purposes.

The limited use reported by respondents of informal reading inventories to assess students': (a) vocabulary; (b) comprehension; and (c) independent, instructional and frustration reading levels raises the question of why these approaches to content area evaluation are used so infrequently, and how the benefits of their use could be demonstrated. Informal reading inventories provide a snapshot of students' overall reading ability and are beneficial in that they are diagnostic in nature and useful for subsequent instruction in domain specific areas, or if needed, in giving or getting individualized follow-up assistance for struggling readers. They are easy and quick to administer and mark, and do not have the prescribed directions and the time limits that standardized tests have (Johns, 2001; Miller, 2003; Roe, Stoodt & Burns, 2001).

There are two additional summative assessment tools that serve different purposes and are endorsed by Afflerbach (2004) and Tierney and Readence (2005), performance assessments and portfolio assessments. Although these approaches were not listed in my questionnaire, it is worth noting that performance assessments are valuable tools for teachers because students' ability to use what is learned from text in content-area classrooms is demonstrated. Portfolio assessments are also valuable tools, because they provide students with opportunities for self-assessment and reflection on their ongoing and accumulative accomplishments related to reading specific content domains (Afflerbach, 2004; Tierney & Readence, 2005).
As my study shows, between 24 (20%) and 47 (40%) of the 119 respondents did not respond to the question about the grade level of struggling readers in their classrooms, and an average of 12% responded with the non-substantive answer "don't know". This raises the question of why these respondents did not know or did not answer. It also raises the issue of how secondary teachers can be helped to become more knowledgeable about and skilled in identifying and conducting ongoing assessments of their struggling students. It is also interesting to consider what kind of perceptions and knowledge would help them realize that many of the things they do, such as discussing domain specific vocabulary, or the reading of charts, or graphs, and following directions are indeed part of teaching reading.

**Issues Related to Teacher Knowledge of Content Area Reading Instruction**

Before discussing what respondents in this study indicated they knew about content reading instruction, it is worth discussing their teaching profiles that may have influenced their perspectives on and knowledge of this aspect of literacy.

**Table 4:** 20th Century Generational Life Cycles by number of respondents, age, decade of birth, K-12 education, and teacher training.

<table>
<thead>
<tr>
<th>Generation</th>
<th>Respondents</th>
<th>Age</th>
<th>Born</th>
<th>K-12 education</th>
<th>Teacher training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y-generation</td>
<td>1</td>
<td>20-30</td>
<td>1980s</td>
<td>1980s-1990s</td>
<td>1990s</td>
</tr>
<tr>
<td>BOOMERS</td>
<td>50</td>
<td>51-60</td>
<td>1950s</td>
<td>1950s-1960s</td>
<td>1970s</td>
</tr>
<tr>
<td>SILENT</td>
<td>3</td>
<td>over 60</td>
<td>1940s</td>
<td>1940s-1950s</td>
<td>1950s</td>
</tr>
</tbody>
</table>
Profiling these participants by the decade they were born, decades of K-12 education, and approximate decade of their teacher training shows that 73% of the respondents who indicated their age (n = 87) were students in grades K-12 between the 1950s and the 1970s, a time when strategy instruction had not yet been discovered and cognitive psychology had not yet had an impact on instruction. These same respondents were preservice teachers in the 1970s and 1980s, at the time that the apprenticeship model of teacher education was the dominant method of instruction in North America.

The trend towards the sociocultural perspective came about in the 1990s, after the majority of the respondents in this study had completed their teacher training. During this period research on content reading and authors of methods textbooks were encouraging content teachers to use effective, research-based practices to engage students with subject matter in order to help them learn how to read to learn. Thus we can see that the majority of the respondents in this study did not learn about content area reading and strategy instruction during their teacher education.

**Teachers’ Knowledge and Attitudes Toward Content Area Reading**

It is not unexpected that almost three-quarters of the respondents indicated that their knowledge about content area reading was limited, and one-third indicated that they were somewhat or very dissatisfied with this knowledge. Their high school experiences and teaching experience background may have limited their exposure to content area reading instruction. As well, the teaching experience of the majority of the respondents in this study was only at the secondary level.
As reported in question 19, teachers often do not see content area reading instruction as part of their job. Almost half of the respondents indicated that, in their view, teaching reading was not the responsibility of content teachers, but only 4% of the teachers’ perceptions were that such a program was not needed. In the open ended part of this question only seven respondents in this study indicated that the use of instructional strategies to teach reading comprehension “did not apply” or was “not applicable” to them. Three other comments were (a) “I don’t teach reading”, (b) “I don’t teach reading comprehension”, and (c) “I do not teach reading skills”. One respondent stated that the use of instructional strategies is “Not a big part of what I do, students learn by doing”. Other comments were queries that suggested a lack of knowledge about the role of reading instruction in content learning. For example, when asked to select from a list of instructional strategies which three they use most frequently, responses included (a) “Don’t know what all of these are”, (b) “Would this include instruction sheets with patterns?” and (c) “Would this include detailed instruction for a particular task? I.e. changing a zipper foot”.

As noted earlier, in much of the history of reading in the last century high school teachers’ attitudes were that their job was not to teach reading, instead the responsibility was perceived to lay with elementary teachers (Kamil, 2003). The issue of content teachers’ resistance to accepting responsibility for teaching content reading strategies has been recognized and discussed in the literature since Gray’s proclamation that “every (subject) teacher should be a teacher of reading” (as cited in O’Brien and Stewart, 1990, p. 102).
These responses reflect what has been reported in the research literature regarding the attitude held by high school teachers and their knowledge base in much of the history of reading during the last century, and it continues to be a concern among reading educators (Kamil, 2003; NCTE website, retrieved October 20, 2006 from http://www.ncte.org/about/over/positions/category/read/118622.htm). Gray's proclamation back in the 1950s that every teacher should teach reading has been supplanted by Singer's (1979) assertion that "every teacher teaches students to read and learn from text" (p. 757). In helping students learn vocabulary, read any type of text or document, or use any kind of learning strategy with text, they are teaching reading although they do not necessarily consider this content area reading instruction. Vacca (2002) pointed out that:

to the extent that texts are an integral part of content studies, teachers have a direct and functional role to play in adolescents' literacy development. On a practical, day-to-day basis, teachers need to reflect on the strategies their students need to be successful in academic subjects. (p. 200)

Santa (2006) endorsed Vacca's view with her vision for promoting the benefit of strategy instruction in high school classrooms. She posited that teachers who see their primary role as "disseminators of content" (p. 474) need to make a "philosophical shift in what it means to teach...the shift requires the integration of process and content" (ibid). She further pointed out that the reason strategy instruction should be easy to sell is it "makes instructional sense and is backed by
several decades of research documenting effectiveness. The research supporting strategy instruction provides an array of options” (468).

Vacca’s and Santa’s vision can be used in the support of professional development. However, we must remain cognizant that students and teachers can misinterpret strategy instruction as an organized bundle of procedures or quick fixes rather than a way to integrate reading to learn into their instruction. As noted earlier, the “why” of the use of a strategy must be processed or internalized or teachers will be unlikely to teach it and students will be unlikely to use it.

A related issue is the workload of the teachers in this study in terms of the number of students and classes taught, and the size of the classes. The number of contact hours, teachers’ relationship with their students, unmet student needs, the range of linguistic and literacy backgrounds, and lack of control over their work environment may contribute to teachers’ resistance to incorporating strategy instruction into their teaching practices. As well, the number of subjects taught raises the issue of the time needed for preparation, marking and report cards. We can extrapolate that the preparation time needed to teach an average of five classes to 200 students in a week and the preparation and marking time needed for the number of classes and students taught will have an impact on their work life.

In a study on teachers’ work life with British Columbia elementary and secondary teachers, Schaefer (2003) similarly found that secondary teachers were affected by a number of frustrations and high stress factors. At the secondary level these stress factors included class size, class composition (the inclusion of ESL students), special needs students and disruptive students, and “grey area students”,
students who exhibit special learning needs, but don’t have a special needs designation or additional dedicated resources besides Learning Assistance. Content teachers may have justifiable reasons for resisting becoming knowledgeable about content area reading, or adding this to their list of responsibilities.

**Implications for Professional Development and Learning Communities**

**Focus on Adolescent Content Area Reading**

This study supports the claim that teachers do not necessarily have adequate information about their students’ needs in the area of content reading instruction, nor do they know how to conduct adequate assessments in this area; indeed, many identified the need for in-service programs. Slightly less than one third of the respondents indicated that they lacked the qualifications to guide students’ reading, and almost three quarters indicated that they had no knowledge or only some knowledge about content area reading. Almost one-third of respondents were dissatisfied or very dissatisfied with their knowledge, slightly more were somewhat satisfied, and about one third were very satisfied.

Although over half of the respondents had not attended or only attended an in-service program on reading once during the period 2001 to 2004, their responses indicated that they were interested in a range of in-service programs on content area reading. Almost two thirds wanted programs on developing comprehension skills. About half wanted programs on using writing, speaking, and listening in reading instruction, and on differentiating instruction for different groups. Slightly fewer than half wanted programs on (a) diagnosing individual instructional needs (b) providing for the disabled reader in the classroom, and (c) developing reading goals and
objectives. These findings suggest that at least they recognized the importance of developing students' literacy skills. Perhaps they recognize a need to go beyond teaching the way they were taught, and beyond what their mentor teacher(s) taught them to teach (Scherer, 1987). These findings confirm the need for teachers' professional development that has long been reported in the literature (Bailey & Guerra, 1984; Morrison & Austin, 1977). These finding also suggest that although there appeared to be some resistance by teachers to the concept of implementing school wide content area reading programs, the need was recognized and the desire for in-service programs was acknowledged by respondents who held leadership positions in their schools.

Although “in-service” was the term used for the questionnaire, professional development is the term currently used by researchers and literacy educators such as Biancarosa and Snow (2004) and Butler, Schnellert, and Cartier (2005). Carnegie Corporation of New York (2006), Kamil (2003), Morrow, Gambrell, & Pressley (2003), Sturtevant (2003, and Vogt & Shearer (2004) to indicate programs in place for practicing teachers. In the past, in-service education was conceived as planned one-time experiences and activities to develop and/or improve teachers' competencies and skills. Watts-Taffe and Gwinn (2005) reported that “the current notions of teacher professional development assert that classroom practice improves when teachers’ education is ongoing, scaffolded, context specific and marked by teacher ownership and investment” (p. 443). Biancarosa and Snow (2004) asserted that teacher learning is more likely to promote lasting and positive changes in teacher knowledge and practice. Over the last two decades, research on
effective teaching has shown that effective practice is linked to inquiry, reflection, and continual professional growth.

There are a number of issues to consider and decisions that need to be made to overcome barriers to implementation of ongoing professional development programs. Kamil (2003) recommended that three questions be considered to avoid barriers to implementation of ongoing professional development: (a) who would be responsible for teaching the program? (b) how would it be implemented without taking away from other forms of professional development? and (c) will teaching reading take away from the learning of content? Consideration also needs to be given to the culture of the school and the cultures within the specific domains or subject areas, and the pedagogical styles of individual teachers (Vogt & Shearer, 2003).

Professional development programs in content area reading need to take into account that teaching is a complex activity and mastery of subject and pedagogical knowledge takes time, learning and practice (Lenski, 2006). Learning to the point of mastery, in any profession, is a developmental process that requires continual deepening of knowledge and skills (Garet, Porter, Desimone, Birman, & Yoon, 2001). Farnan and Grisham (2006) asserted that teachers go through a developmental continuum in their stages of growth, moving from novice to developing professional to advanced professional to master teacher. They posited that “experienced teachers need to continue their professional development throughout their careers to become ‘master teachers’” (p. 103). The importance of professional development should not be underestimated and should be high on the
agenda of those involved in secondary literacy education, from teachers to principals to policy makers.

**Implications for this Study**

We know what to do to help struggling adolescent readers learn from text in content areas, and we have known for at least twenty years. However, as this study of teacher leaders in one large urban district in Canada illustrates, this knowledge is still not reaching those who need it. There are three key areas of knowledge that teachers need in order to help students read content area materials. The first area is knowledge of assessment tools that will help them identify students who are struggling, and the areas in which they struggle (e.g. fluency, comprehension, critical reading skills). The second area of knowledge is content reading strategies that are integrated into disciplinary teaching, together with formative assessment that will support instructional decision-making. Finally, teachers need long-term and situated professional development programs in content area reading and strategy instruction that are sensitive to the context of their professional lives and that facilitate learning communities in schools.

**Limitations of This Study**

There were some limitations to this study. First, the population was limited to Teacher Leaders. Second, the survey did not include their teacher education experience with content area reading and strategy instruction. Third, they were not asked what professional development was available to them. Finally, teachers were surveyed by questionnaire, and interviews might have provided additional information.
Suggestions for Further Research

This study identified that there was some resistance by teachers to the concept of implementing school wide content area reading programs. Further research on the reasons for this resistance, and effective methods to overcome the resistance, would be valuable.

The population of this study was confined to teacher leaders. A broader survey is needed of all teachers in a school to gain information about their values, beliefs and attitudes toward content area reading and strategies instruction, and their practices in these areas.

The teachers surveyed in this study were all secondary school teachers. It would be of benefit to conduct a survey with elementary and secondary school teachers, in order to gain information about their similarities and differences in teaching of content area reading and strategy instruction.

More research is needed to identify what instruction in content area reading strategies is being provided to preservice teachers in various disciplines in teacher education programs in BC.

Conclusion

Content area reading instruction will no doubt continue to be a focus for literacy educators and policy-makers in the foreseeable future. As the literacy skills required for academic achievement and success in the work force become increasingly complex, secondary schools will need to continue to support teachers' professional skills that will in turn help students become sophisticated content area readers. More research is needed on what constitutes high quality and long term
reform efforts that support teachers' understanding of how to integrate formative assessments into their instruction and to use what they learn about students' strengths and needs to make informed decisions about supporting their learning from texts.

Finally, as a field, we need to move beyond notions of "crises" in literacy, and continue to work toward disseminating the best research on learning to read from texts, and support teachers as they learn new assessment and instructional approaches and integrate them into their teaching across the disciplines for all of their students. We know that findings from a variety of literacy assessments in North America point to gender and socio-economic gaps in literacy and academic achievement. Regardless of the causes of these gaps, we need to address the instructional needs, particularly the needs of the approximately 25% of students who continue to struggle and are most in jeopardy of academic failure in our secondary schools.
BIBLIOGRAPHY


Graves, M. (2004). Theories and constructs that have made a significant difference in adolescent literacy—but have the potential to produce still more positive benefits. In T.L. Jetton & J.A. Dole (Eds.), *Adolescent literacy research and practice* (pp. 433-452). New York: Guilford Press.


Gunderson, L. (2004). The language, literacy, achievement, and social consequences of English-only programs for immigrant students. (Presidential address) in *53rd Yearbook of the National Reading Conference* (p.1-27) Oak Creek, WI.


McInnes, C., & Petti, F. (2002, October 2). 29 per cent of Grade 10 students can't read at provincial standard. Vancouver Sun, A1, A3.


APPENDIX I
Questionnaire entitled Secondary Teachers' Perspectives on Adolescent Content Area Reading

SECONDARY TEACHERS'
PERSPECTIVES ON ADOLESCENT CONTENT AREA READING

This questionnaire should take about 15 minutes to complete.
Please read the instructions for each question carefully and respond in pen.
Your honesty is appreciated.

This is a voluntary, but important survey. All of the information that you provide in this questionnaire is strictly confidential. Questionnaires contain identification numbers for statistical purposes only. All information that would permit identification will be removed.

Ruth Allman
Department of Language and Literacy Education
University of British Columbia
Tel (604) 303-7675
Fax (604) 303-7675
Email rallman@telus.net
SECTION A

1. YOUR TEACHING CONDITIONS

   a. In the current term/semester, how many subjects do you teach in a week? ______
   b. In the current term/semester, how many classes do you teach in a week? ______
   c. In the current term/semester, how many students do you teach in a week? ______
   d. In the current term/semester, how many students are in your smallest class? ______
   e. In the current term/semester, how many students are in your largest class? ______

2. YOUR TEACHING LOAD

   In the 2003-2004 school year, what grades are you scheduled to teach?
   (check all that apply)

<table>
<thead>
<tr>
<th>Gr. 8</th>
<th>Gr. 9</th>
<th>Gr. 10</th>
<th>Gr. 11</th>
<th>Gr. 12</th>
</tr>
</thead>
</table>
   a. English                          |     |       |       |       |       |
   b. Social Studies                   |     |       |       |       |       |
   c. Science                          |     |       |       |       |       |
   d. Mathematics                      |     |       |       |       |       |
   e. Physical Education               |     |       |       |       |       |
   f. French                           |     |       |       |       |       |
   g. Spanish                          |     |       |       |       |       |
   h. CAPP (career preparation)        |     |       |       |       |       |
   i. Art                              |     |       |       |       |       |
   j. Music                            |     |       |       |       |       |
   k. Visual Arts                      |     |       |       |       |       |
   l. Technology                       |     |       |       |       |       |
   m. Home Economics                   |     |       |       |       |       |
   n. Business Education               |     |       |       |       |       |
   o. Other                            |     |       |       |       |       |
   p. Other                            |     |       |       |       |       |

1 of 10
3. YOUR DEPARTMENT HEAD OR TEACHER HEAD POSITION(S)

In the 2003-2004 school year, what is your Department Head or Teacher Head position(s)?
(check all that apply)

- [ ] a. English
- [ ] b. Mathematics
- [ ] c. Science
- [ ] d. Social Studies
- [ ] e. Applied Skills
- [ ] f. Fine Arts
- [ ] g. Modern Languages
- [ ] h. Resource Services
- [ ] i. Student Services
- [ ] i. ESL
- [ ] j. Special Education Support
- [ ] k. Technology
- [ ] l. Tech Studies
- [ ] m. Business Education
- [ ] n. Home Economics
- [ ] o. Physical Education
- [ ] p. School Growth
- [ ] q. Other Position
- [ ] r. Other Position
- [ ] s. Other
Section B

4. Based on your experience in your subject area(s), approximately how many of your students have difficulties with the following reading and comprehension skills? (check one for each skill)

<table>
<thead>
<tr>
<th>Number of Students</th>
<th>None</th>
<th>A Few</th>
<th>About Half</th>
<th>Most</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Phonological processing (sounding out words)</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>b. Knowledge of letters and associated sounds</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>c. Understanding written directions</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>d. Following written directions</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>e. Problem solving</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>f. Reading questions</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>g. Answering questions</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>h. Taking notes</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>i. Studying and test taking</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>j. Reading for meaning</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>k. Reading textbooks</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>l. Finding main ideas</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>m. Finding themes</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>n. Finding details</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>o. Making judgments</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>p. Making inferences</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>q. Creating tables</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>r. Interpreting tables</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>s. Creating graphs</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>t. Interpreting graphs</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>u. Other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### INSTRUCTIONAL METHODS, STRATEGIES AND RESOURCES

5. How frequently do you prefer to use each of following groupings with your classes? (check all that apply)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. One-to-one</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Pairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Small group settings (3-5 students)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Large group setting (half class)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Whole class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. How frequently do you prefer to use the following instructional format(s)? (check all that apply)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Lecture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Lecture / Discussion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Peer / group teaching</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Reciprocal Teaching (RT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(summarizing, questioning, clarifying, predicting)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Transactional strategy instruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(explanation, modeling, guided practice)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Other (please describe)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What three instructional strategies do you use most frequently to teach reading comprehension? (check three strategies only)

| a. Anticipation Guide |       |
| b. Directed Reading-Thinking Activities (DR-TA) |       |
| c. Guided Reading Procedure (GRP) |       |
| d. Prereading Plan (Prep) |       |
| e. Think-aloud procedure |       |
| f. Vocabulary strategies |       |
| g. Graphic Organizers |       |
| h. K-W-L (know, want to know, learned) |       |
| i. Other (please describe) |       |
8. How frequently do you use the following instructional resources in your teaching? (check all that apply)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Videos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Textbooks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Teacher prepared materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Reading guides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Study guides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Tape / book combination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. School library material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Public library material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Internet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Other (please describe)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. What instructional aids do you prefer to use? (check all that apply)

a. Adjunct aids (tables, charts, diagrams, lists, maps, etc) ............... Ø
b. Blackboard .............................................. Ø
c. Overhead projector ....................................... Ø
d. PowerPoint ................................................ Ø
e. Other (please specify) ..................................
10. INSTRUCTION FREQUENCY

Last year, how frequently did you teach students to read the following formats? (check one box for each format)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Never</th>
<th>3 or 4 times</th>
<th>About</th>
<th>At least</th>
<th>Nearly every</th>
</tr>
</thead>
<tbody>
<tr>
<td>a year</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

Frequency

---

a. **Narrative:** texts that tell a story or give the order in which things happen

---

b. **Expository:** (texts that describe things or people or explain how things work or why things happened)

---

c. **Documents:** (tables, charts, diagrams, lists, maps, etc.)

---

d. Other (please specify)

---

11. How often do you encourage your students to read outside of school? (i.e. at least once a week) (check all that apply)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Never</th>
<th>3 or 4 times</th>
<th>About</th>
<th>At least</th>
<th>Nearly every</th>
</tr>
</thead>
<tbody>
<tr>
<td>a year</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

Frequency

---

a. Suggest books to read?

---

b. Suggest newspaper articles to read?

---

c. Suggest specific magazine articles to read?

---

d. Suggest specific web sites to explore?

---

e. Hold discussions about material read?

---

f. Ask students to read for the course?

---

6 of 10
SECTION C

ASSESSMENT AND EVALUATION

12. Approximately what percent of your students do you perceive as being struggling readers? (check one box for each grade)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Less than 25%</th>
<th>25% to 50%</th>
<th>50% to 75%</th>
<th>More than 75%</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Grade 8</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. Grade 9</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. Grade 10</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d. Grade 11</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e. Grade 12</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

13. What gender are the majority of your struggling students? (check one)

Female... □
Male... □

14. In your opinion, what has impeded these students' literacy development? (please specify)

_________________________________________________________

15. How do you assess your students reading skills, needs and abilities? (check all that apply)

a. Standardized tests... □
b. Teacher assessment... □
c. Student records... □
d. Student self-assessment... □
e. Observation... □
f. Individual assignments... □
g. Informal reading inventories... □
h. Cloze tests... □
i. Content area reading inventories... □
j. Other (please describe)...

_________________________________________________________
16. Does your school provide you with student information regarding the following? 

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Instructional reading levels</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. Strategies they employ when using specialized and technical vocabulary</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. Competence with literal levels of comprehension</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d. Competence with inferential levels of comprehension</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e. Competence with critical levels of comprehension</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f. Background knowledge in your subject area</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>g. Skill with study techniques</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>h. Interests and attitudes</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>i. Other (please describe)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Does your school offer any instruction programs for students experiencing reading difficulties? (check one)

No...□, → Please go to Question 19  Yes...□, → (If yes, Please specify)

18. Does your school offer special services for students experiencing reading difficulties? (check one)

No...□, Yes...□, → (If yes, please describe the type of services)

19. Are there factors that hinder the development of schoolwide efforts to deliver content reading programs or services in your school?

No...□, Yes...□, → (If yes, please check all that apply)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Reading is not the responsibility of content teachers</td>
<td>□</td>
</tr>
<tr>
<td>b. School lacks administrative support or leadership</td>
<td>□</td>
</tr>
<tr>
<td>c. Lack of inservice education</td>
<td>□</td>
</tr>
<tr>
<td>d. Lack of qualification to guide students' reading</td>
<td>□</td>
</tr>
<tr>
<td>e. Lack of personnel to coordinate programs</td>
<td>□</td>
</tr>
<tr>
<td>f. Such a program is not needed</td>
<td>□</td>
</tr>
<tr>
<td>g. Financial support is lacking</td>
<td>□</td>
</tr>
<tr>
<td>h. Other reason (please specify)</td>
<td></td>
</tr>
</tbody>
</table>

8 of 10
SECTION D

YOUR TEACHING NEEDS

20. For your students who are struggling readers, what support would you like to have in your classes or school? (please describe)

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

21. How much do you know about teaching content area reading? (check one)

Nothing □, Some □, A lot □, Everything □

22. What is your level of satisfaction with your knowledge about teaching content area reading and strategy instruction? (check one)

Very satisfied □, Somewhat satisfied □, Somewhat dissatisfied □, Very dissatisfied □

23. How many times have you attended an in-service program on reading in the last three years? (check one)

None □, Once □, Twice □, 3 times □, 5 or more times □

24. What types of in-services programs on content area reading would you like made available? (check all that apply)

a. Developing comprehension skills □
b. Diagnosing individual instructional needs □
c. Using writing, speaking, and listening in reading instruction □
d. Providing for the disabled reader in the classroom □
e. Developing reading goals and objectives □
f. Differentiating instruction for different groups □
g. Using supplementary reading materials □
h. Using the library effectively □
i. Other reason (please describe) □
25. Please indicate your gender.
   Female □, Male □

26. Please indicate your age category.
   21-30 □, 31-40 □, 41-50 □, 51-60 □, over 60 □

27. Please indicate your degree(s). (check all that apply)
   BA or equivalent □, MA or equivalent □
   BSc or equivalent □, MSc or equivalent □
   B.Ed □, M.Ed □
   Teaching Diploma □, Ph.D □
   Other (please specify) ________________________________

28. As of June 30, 2004, how many years will you have taught? (please specify)
   Elementary □, Secondary □, Other □

Your views are important to us. If you are willing to be interviewed to discuss your views further,
please provide your name, telephone number and email address below. Interviews will be done in
person or over the telephone, at your convenience, and should take about 30 minutes.

Name ________________________________

Telephone # _________________________ Email address ________________________________

THANK YOU VERY MUCH FOR YOUR PARTICIPATION.

All responses will be kept confidential.
Identification codes are used only for statistical purposes.

Please return this questionnaire in the postage-paid addressed return envelope.
# Certificate of Approval

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Department</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rogers, T.</td>
<td>Language and Literacy Educ</td>
<td>B03-0717</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institutions Where Research Will be Carried Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allman, Ruth, Language and Literacy Educ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Co-Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allman, Ruth, Language and Literacy Educ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Leaders' Perspectives on Adolescent Content Area Reading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sponsor Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Leaders' Perspectives on Adolescent Content Area Reading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approval Date</th>
<th>Term (Years)</th>
<th>Documents Included in This Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 9, 2003</td>
<td>1</td>
<td>Dec. 9, 2003, Contact letter / Postcard / Oct. 15, 2003, Questionnaire</td>
</tr>
</tbody>
</table>

The protocol describing the above-named project has been reviewed by the Committee and the experimental procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval of the Behavioral Research Ethics Board by one of the following: Dr. James Frankish, Chair, Dr. Cay Holbrook, Associate Chair, Dr. Susan Rowley, Associate Chair

This Certificate of Approval is valid for the above term provided there is no change in the experimental procedures.
APPENDIX III

Questionnaire cover letter

THE UNIVERSITY OF BRITISH COLUMBIA

Dear Colleague:

I am Ruth Allman, a doctoral candidate in the Department of Language and Literacy (LLED) working as Co-Investigator with Principle Investigator Dr. Theresa Rogers. We are conducting a study to explore Vancouver Secondary Department Heads' and Teacher Heads' perceptions and concerns about, and experiences with, adolescent literacy (reading) in content areas across the curriculum.

As a Secondary Teacher Department Head and/or Secondary Teacher Head, you have been selected to answer this questionnaire Secondary Teachers' Perspectives on Adolescent Content Area Reading because of your subject area expertise and leadership role in the field.

Many secondary students have no problem reading and understanding content area texts and other course materials. However, reports from the BC Ministry of Education Foundation Skills Assessment (2000, 2002, 2003) indicate that a number of Grade 4, Grade 7 and Grade 10 students are reading below grade level, and may be at risk of academic failure as they progress through the grades.

We are conducting this survey to find out your perspectives on adolescent content area reading. Results from this study will represent an important step towards understanding a variety of classroom related factors and concerns that influence adolescent content literacy in a given discipline.

UBC
Department of Language and Literacy Education
2125 Main Mall
Vancouver, B.C., Canada V6T 1Z4
Tel: 604-822-5788
Fax: 604-822-3154

Date
Teacher
Department Head
Secondary School
Street

Email: LLED@alumni.ubc.ca
Web Site: www.LLED.alumni.ubc.ca

242
We would appreciate your taking approximately 15 minutes to respond to this questionnaire and return it in the enclosed self-addressed stamped envelope as soon as possible.

Of course your participation in this study is completely voluntary. Your name or signature is not required. Any information you provide will remain strictly confidential. Identification numbers are used for statistical purposes only. If you have any question or desire further information with respect to this study, you may contact Dr. Theresa Rogers at (604) 822-0901 or Ruth Allman.

If the questionnaire is completed, it will be assumed that consent has been given. You may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598 if you have concerns about your rights or treatment as a research subject.

An abstract or a copy of the final report will be made available upon completion of the study.

Thank you for your assistance

Yours sincerely,

Ruth Allman
Ph.D. Candidate
Tel: (604)-303-7675 Email: rallman@telus.net

Theresa Rogers, Associate Professor
Principal Investigator
Tel (604) 822-0901 Email theresa.rogers@ubc.ca
Dear Colleague,

Recently a questionnaire was mailed to you seeking your opinions and concerns about your students' content area reading needs and abilities.

If you have already completed and returned the questionnaire, please accept our sincere thanks. We are especially grateful for your help because it is only by asking educators like you to share your experiences that we can gain an understanding of adolescent's academic literacy needs and address these needs with options.

If you did not receive a questionnaire, or if it was misplaced, please call us and we will mail another one to you today.

Dr. Theresa Rogers
Associate Professor
(604) 622-0901

Ruth Allman
Ph.D. Candidate
(604) 303-76**