

GRADE THREE TEACHERS' PERSONAL PRACTICAL KNOWLEDGE
OF READING INSTRUCTION AND ITS RELATIONSHIP TO
TEACHER BACKGROUND, THEIR STUDENTS' READING EXPERIENCES AND ACHIEVEMENT: A
SECONDARY ANALYSIS OF THE 1991 IEA READING LITERACY STUDY

by

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Abstract

The recent shift from behaviorist to cognitive views of teaching premises the role of teachers' knowledge in their instructional practice. In light of dramatic changes in literacy theory and policy, teachers' knowledge of reading instruction is a particular interest in both teaching and literacy instruction research. The purpose of this study was to construct a description of grade three reading instruction in Canada (BC) and to explain differences between teachers' instructional approaches on measures of teacher background, student background, and student achievement. To accomplish these purposes, this study reanalyzed data from a representative sample of provincial teachers (N=154) and students (N=2813) from the 1991 International Association for the Evaluation of Educational Achievement Reading Literacy Study.

Analysis was planned in two stages, exploratory followed by confirmatory. Exploratory first-and second-order factor analyses of the teacher data were conducted and two factors of reading instruction were identified. Based on interpretative frameworks of Traditional, Whole Language, and Strategic perspectives of reading instruction, the factors were named Strategic Whole Language and Programmatic Skills. The Strategic Whole Language factor seemed to emphasize students' use of comprehension strategies in learner-centered, literature-based classrooms. The Programmatic Skills factor indicated an instructional approach that is teacher-centered and focussed on students' mastery of hierarchial skills. Following identification of the reading instruction factors, exploratory cluster analysis based on teachers' factor scores identified four groups of teachers. None of the four teacher groups consistently reflected the properties of either the Strategic Whole Language or Programmatic Skills factor. Finally, analyses of variance and chi square analyses revealed no statistically significant differences among these teacher groups on measures of teacher background, student background, and student achievement.

Major findings from this study suggest that grade three teachers' personal practical knowledge of reading instruction is an interaction of independent factors rather than a subscription to one of the perspectives defined in the literature. In this way, the eclectic approaches to instruction found in this study

challenge the assumption of a paradigm shift declared in the reading literature. Second, students' similar achievement across instructional approaches, as measured in this study, suggests equivalent effectiveness of several kinds of instruction for some, but not all, aspects of students' reading development. Findings from this study provide a foundation for teacher and curriculum development, particularly by identifying the minimal attention currently being paid to students' strategic reading abilities. Finally, a number of methodological issues in large-scale assessment studies are discussed and suggestions concerning research instruments and data analysis are given.

Table of Contents

Abstract	ii
Table of Contents	iv
List of Tables	viii
List of Figures	x
Acknowledgement	xi
CHAPTER I: THE RESEARCH PROBLEM	1
Background to the Problem	2
Paradigms of Literacy and Reading Instruction	2
Effective Reading Instruction	4
Research Questions	7
Research Problem	8
Overview of Theoretical Frameworks	9
Teacher Knowledge	9
Perspectives of Reading Instruction	10
Importance of the Study	12
Limitations of the Study	14
Chapter Summary and Overview of the Following Chapters	15
CHAPTER II: PERSPECTIVES ON READING INSTRUCTION	16
Traditional Perspective of Reading Instruction	17
Influential Models of the Reading Process on the Traditional Perspective of Reading Instruction	19
Curriculum and Instruction in the Traditional Perspective of Reading Instruction	20
Contentious Issues Related to the Traditional Perspective of Reading Instruction	22

Summary of Traditional Perspective of Reading Instruction	24
Whole Language Perspective of Reading Instruction	24
Theoretical Foundations of Whole Language	25
Reading Curriculum and Instruction in the Whole Language Perspective	27
Contentious Issues Related to the Whole Language Perspective of Reading Instruction	28
Strategic Reading Perspective of Reading Instruction	35
Theoretical Foundations of Strategic Reading Perspective of Reading Instruction	35
Similarities Between Traditional, Whole Language, and Strategic Reading Perspectives of Reading Instruction	40
Summary of Major Perspectives of Reading Instruction and Preview of Chapter III	42
CHAPTER III: THE STUDY OF TEACHING	44
Early Period (late 1800's to 1940's)	44
Formalization Period (1950's to 1970's): The Rise and Fall of Process-Product Research	46
Teacher Cognition	56
Teacher Decision-Making	57
Teacher Knowledge	63
Teacher Knowledge and Teacher Change	65
Chapter Summary and Preview	69
CHAPTER IV: METHODOLOGY	72
Background of the IEA Reading Literacy Study	75
General Organization of the IEA Reading Literacy Study	77
Research Procedures and Instruments: The Student Achievement Test, Student Background Questionnaire, and the Teacher Questionnaire	80
Data Analysis	87
Research Question One	88
Research Question Two	92

Research Question Three	92
Research Question Four	97
Chapter Summary and Preview	104
CHAPTER V: FINDINGS	106
Research Question One	106
Part 1: First-Order Factor Analysis	107
Part 2: Second Order Factor Analysis	119
Research Question Two	126
Research Question Three	132
Research Question Four	134
Student Reading Experience	134
Student Achievement	134
Chapter Summary and Preview	142
CHAPTER VI: DISCUSSION	143
Research Question One	143
First-Order Factors	144
Second-Order Factors	156
Research Question Two	161
Research Question Three	166
Research Question Four	168
Chapter Summary and Preview	172
CHAPTER VII: SUMMARY, LIMITATIONS, CONCLUSIONS, IMPLICATIONS	173
Summary of the Study	173
Limitations	179
Conclusions	182

Implications	182
APPENDICES	207
Appendix A: Student Background Questionnaire	208
Appendix B: Teacher Background Questionnaire	219
Appendix C: Distribution of Teachers' Professional reading	236
Appendix D: Distribution of Teachers' Casual reading	237
Appendix E: Distribution of Principal Engagement	239
Appendix F: Distribution of Students' School Reading	240
Appendix G: Distribution of Students' Voluntary Reading	241
Appendix H: Distribution of Students' Reading Interactions	243
Appendix I: Distribution of Students' Affective Perception of Reading Acquisition	244
Appendix J: Distribution of Students' High Level Perception of Reading Acquisition	245
Appendix K: Distribution of Students' Low Level Perception of Reading Acquisition	246
Appendix L: Distribution of Students' Self-rating	247
Appendix M: Distribution of Students' Homework Intensity	248
Appendix N: Means, Standard Deviation, and Correlations of Reading Activities	249
Appendix O: Means, Standard Deviation, and Correlations of Instructional Strategies	252
Appendix P: Means, Standard Deviation, and Correlations of Reading Instruction	253
Appendix Q: Means, Standard Deviation, and Correlations of Assessment Methods	256
Appendix R: Means, Standard Deviation, and Correlations of Assessment Focus	257
Appendix S: Means and Standard Deviations of Second-Order Factors	258
Appendix T: Means and Standard Deviations of Teacher Background Variables	259
Appendix U: Means and Standard Deviations of Student Reading Experience Variables	260
Appendix V: Request for Permission to Use Information from IEA Reading Literacy Study	261
Appendix W: Permission to Use Information from IEA Reading Literacy Study	262

List of Tables

Table 1: Comparative Assumptions of Traditional, Whole Language, and Strategic Reading Perspectives of Reading Instruction	18
Table 2: Summary of IEA and Actual Samples Used in This Study	79
Table 3: Summary of Aspects of Reading Instruction Used in This Study	90
Table 4: Summary of Teacher Background Variables Used in This Study	94
Table 5: Summary of Procedures Used to Construct Teacher Background Variables	96
Table 6: Summary of Procedures Used to Construct Student Reading Experience Variances	99
Table 7: Summary of Student Reading Experience Variables Used in This Study	100
Table 8: Summary of Student Reading Achievement Variables Used in Study	105
Table 9: Two Factor Analysis of Reading Activities	108
Table 10: Two Factor Analysis of Instructional Strategies	111
Table 11: Two Factor Analysis of Views of Reading Instruction	113
Table 12: Two Factor Analysis of Assessment Methods	118
Table 13: One Factor Analysis of Assessment Focus	120
Table 14: Two Factor Analysis of Assessment Focus	121
Table 15: Summary of First-Order Factors of Reading Instruction	122
Table 16: Results of 2nd Order Factor Analysis	124
Table 17: Intercorrelations Among Variables Used in 2nd Order Factor Analysis	125
Table 18: Summary of Cluster Analysis: Identifying Teacher Groups	128
Table 19: Mean Scores on 2nd-Order Factor Variables by Teacher Group	129
Table 20: Teacher Profiles on Second Order Factors of Instructional Practice	131
Table 21: Summary of Significant Tests of Differences among Teacher Groups: Teacher Characteristics and Classroom Conditions	133
Table 22: Summary of Significant Tests of Differences among Teacher Groups: Student Reading Experience	135

Table 23: Means and Reliability Coefficients of Student Achievement	136
Table 24: Means, Standard Deviations, and Intercorrelations of Student Achievement Domains:	
Student Level	138
Table 25: Means and Standard Deviations of Student Achievement Domains: Teacher Level	139
Table 26: Summary of Significant Tests of Differences among Teacher Groups: Student Achievement	
Variables	140
Table 27: Intercorrelations Between 1st Order Factors and Student Reading Domain Scores	141
Table 28: Summary of First-Order Factors: Emphases, Indications of Perspective Evolution, and	
Variables with Multiple Interpretations	147
Table 29: Summary of Assumptions of First-order Factors and Their Relationships to Assumptions	
of Traditional, Whole Language, and Strategic Reading Perspectives of Reading Instruction .	150
Table 30: Summary of Central Qualities of Second Order Factors	160

List of Figures

Figure 1. Overview of the Design of the Study 74

Figure 2. Teacher Profiles on Strategic Whole Language and Programmatic Skills 130

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CHAPTER I: THE RESEARCH PROBLEM

Recent research in both teaching and literacy instruction confirms the long-held perception of the distinction between the complexity of classroom instruction and the boundaries of any one approach (McCargar, 1994; Pressley & Rankin, 1993; O'Flavahan & McConnell, 1990; Richardson, 1990; Scharer, 1992). Given the eclectic character of instruction in any given classroom, providing a meaningful large scale description is a particularly challenging task. This study attempts to provide such a description by reanalyzing one educational system's data from the 1991 International Association for the Evaluation of Educational Achievement (IEA) Reading Literacy Study. Specific purposes of this reanalysis are threefold: to identify factors that underlie reading instruction, to describe groups of teachers based on these factors, and to examine other teacher and student variables of these teacher groups. Of particular interest in both the international and any national analysis are instructional variables of student achievement. Identification of these variables reveals significant ways to increase literacy in a population. Although international findings highlight diverse approaches to literacy instruction, the influence of instruction on student achievement was found to be negligible (Lundberg & Linnakyla, 1993). The IEA proposed that secondary analyses by individual participating countries could uncover instructional effects. Specifically, the IEA suggested focusing such analyses on countries with homogenous populations and using country-derived rather than internationally-derived instructional variables. As one of 32 participating school systems, Canada (BC) is a prime candidate for such a re-analysis.

Background to the Problem

The background to this study draws from two related bodies of literature: one, paradigms of literacy and reading instruction; and two, effective instruction. I will first introduce concepts key to my study from the literature on literacy instruction, followed by an introduction to developments and issues in effective reading instruction.

Paradigms of Literacy and Reading Instruction

Dramatic shifts in conceptions of the reading process (Goodman, 1994; Langer, 1991; Rosenblatt, 1978; Rumelhart, 1994), reading development (Harste, Woodward, & Burke, 1984) along with identification of effective instructional actions (Anderson, Hiebert, Scott & Wilkenson, 1985; Samuels & Farstrup, 1992) have propelled the creation of new policies in reading instruction. Major professional organizations concerned with literacy education endorse curriculum and instruction grounded in meaning-based, constructivist views of language (e.g., Lloyd-Jones & Lunsford, 1989). Many school systems throughout North America, including British Columbia, are implementing such literacy curricula (British Columbia Ministry of Education 1990a, 1990b, 1990c). In other words the fields of literacy in general and reading in particular are undergoing paradigm shifts (Dillon, 1994; Froese, 1990) similar to those in other fields (Weaver, 1994).

Despite theoretical, professional, and school system support for meaning-based, constructivist approaches to literacy instruction, many researchers claim that code-based, behaviorist perspectives prevail in the classroom (Langer & Allington, 1992). Two interpretations of the gap between theory and practice can be found in the literature. One interpretative lens is the lingering influence of past beliefs and the other is the naturally eclectic nature of teaching.

Those explaining the gap between theory and practice as due to the influence of the past point to the tenacious assumptions of associationist psychology, particularly the formalized principles of effective teaching. These researchers argue that along with the general persistence of transmissionism and objectivism in North American classrooms (Cuban, 1984; Prawat, 1992), scope and sequence curricula and behaviorist learning theory remain firmly entrenched foundations of reading instruction in particular (Langer, 1984; Langer & Allington, 1992). Some researchers also argue that rationalization and reification

of basal reading programs prevent teachers from reconceptualizing alternatives (Goodman, Shannon, Freeman & Murphy, 1987). From her comprehensive studies of literacy instruction in the United States, Langer (1991) concludes that:

The materials of instruction as well as the underlying theories of teaching and learning that were developed during the first half of the century continue to shape people's underlying conception of literacy education (p. 11).

The extent to which this trend applies to Canada (and British Columbia) is probably less than that of other countries due to our legacy of child-centered education (Luke, 1988) and ready embrace of holistic literacy education, both at the grass-roots and policy levels (McConaghy, 1988). On the other hand, Canada is only now beginning to emerge from the educational shadow of the United States to develop its own policies, academic literature, and instructional literature in literacy (e.g., Church & Sutton, 1992; Courtland et al., 1994; Crowhurst, 1994; Froese, 1994; Willinsky, 1990).

Whether speaking of Canada or North America in general, few would argue against the existence of a gap between theory and practice. Those who interpret this gap in terms of teachers' natural propensity for eclecticism view teaching as "the ability first to deal with the incompleteness of any given theory and second to combine theories to construct meaningful interpretations that guide practice" (Moorman, Blanton & McLaughlin, 1994, p. 319). However, other educators advocate that instruction be driven by a single perspective (Edelsky, Altwerger, & Flores, 1991). Although teachers may profess holding a particular perspective, closer observation reveals teachers' differential use of multiple perspectives. Teachers actively combine materials and practices from different perspectives (Lind, 1992; O'Flavahan & McConnell, 1990; Pressley & Rankin, 1993; Walmsley & Adams, 1993). In this way, teachers' theoretical orientations to reading instruction are more accurately described in terms of degrees of emphases on a common group of perspectives, rather than simply on one perspective or another (McCargar, 1994). Finally, teachers continuously adjust and accommodate instruction in response to a myriad of personal, student, curricular, administrative, and political variables (Buckles, 1992; Freeman, Freeman & Fennacy, 1993; Mitchell, Konopak & Readance, 1991; Moss, 1990; Pace, 1992; Richardson, Anders, Tidwell & Lloyd, 1991). This research is showing instruction to be dynamic and fluid across situations and over time.

Thus research shows not only that teaching is not restricted to single perspectives, but also the mistake of mapping teachers' theories to those in the literature. An increasingly accepted explanation of what observers perceive as a crazy quilt of activities and actions (Richardson, 1990) is that "teachers' considerations (are) much broader and more contextual than any of the theoretical orientations (can) account for" (Richardson, 1990, p. 15). This view contrasts sharply with assumptions of teachers' resistance or recalcitrance towards change (McLaughlin, 1987). Thus, whereas some observers perceive contradiction and confusion in the classroom, teachers seem to perceive their unique practical knowledge as consciously and positively multi-theoretical (Pressely & Rankin, 1993; Scharer, 1992).

As in the rest of North America, eclecticism characterizes literacy instruction in Canada (Maguire, 1989; Warren, Rees & Edwards, 1993). While some view this situation as heresy (Edelsky et al., 1991) others view it as acumen in service of students' literacy development (Stahl, 1994). Across Canada, teachers identify as most effective a combination of instructional approaches rather than any single one (Warren, Rees & Edwards, 1993). Recent surveys of grade four literacy and reading instruction in British Columbia confirm the prevalence of eclecticism (British Columbia Ministry of Education, 1988; Froese, 1993; Scott & Butler, 1994). These studies show that although teachers in British Columbia are using more modern or whole language-like activities, they also continue to use basals, workbooks and other skill development materials. Thus despite popular conceptions of British Columbia as a stronghold of whole language instruction (Maclean, 1992; McConaghy, 1988; Simner, 1993), research shows the existence of both a variety of approaches and a variety of interpretations of holistic instruction.

Effective Reading Instruction

Relevant background to my study is also found in the teacher effectiveness literature. Concern for effect on student literacy development is present in various degrees of blatancy and latency in every study of instruction. Affective and cognitive aspects of development are most commonly studied. Most desired by policy-makers for reasons of both assessment and curriculum revision are findings about student achievement. The relationship between instruction and achievement is one focus of both process-product research and comparative reading research. However, limitations are present in both bodies of research. I will first discuss shortcomings of the two research genres in studies focussed on instruction-achievement

relationships, then identify theoretical and methodological adjustments made in this study in light of these problems.

Process-Product Research and Comparative Reading Instruction Research

Process-product research grew out of application of behaviorism to the study of teaching (Dunkin and Biddle, 1974). It has been criticized on many counts both during its reign and after its fall (Doyle, 1977; Hoffman, 1986; Shulman, 1986a). Theoretical limitations of process-product research are particularly acute in light of developments in learning theory and the study of teaching. During the 1970's, process-product research yielded numerous principles of effective reading instruction (reviewed in Rosenshine & Stevens, 1984). However, behaviorist foundations of this research program render these principles limited and questionable today. In the 1970's, cognitive psychology began to influence both learning theory and the study of teaching. While current studies of teaching are framed in teacher cognition, and specifically in teachers' knowledge of instruction with regard to particular subject areas (Shulman, 1986b, 1987), this research focuses primarily on the teacher and rarely on student outcomes. Validity of student outcomes measures has become a controversial subject on its own. In accordance with the shift in focus from product to process in cognitively-based learning theory, the validity of outcomes based on standardized measures is debated vigorously in all areas of educational literature (for one of the earlier discussions of this issue see House, Glass, McLean & Walker, 1978). Although assessment measures for the classroom are beginning to be developed that are reflective of current assumptions about literacy (e.g., Valencia, Hiebert & Afflerbach, 1994), such measures are rare in large scale studies (two exceptions are the recent National Assessment of Educational Progress in the United States and the School Achievement Indicators Program Assessment in Reading and Writing in Canada). Ideally then, any current investigations of instructional effects require grounding in contemporary theory of teaching and learning, as well as the use of theoretically congruent indicators of learning.

Comparative reading research may be regarded as a cousin of process-product research. Although this body of research takes into account both current literacy and learning theory, problems related to several points remain: the ideological context of much of this literature, the assumption of theoretical

dichotomies in the classroom, the actual meaning of the methods under study, and as noted above, the validity of student outcomes. These points are briefly discussed below.

An ongoing theme in comparative reading research could be termed "one-upmanship." Decades of this research have been based on code-emphasis versus meaning-emphasis approaches to instruction. Although many comparative reading studies manage to remain nonpartisan, others are entangled in the heated debate between holistic and code-emphasis approaches (Carbo, 1988; Chall, 1967, 1989; Smith, 1994). The assumptions of instructional dichotomies by research does not accord with how teachers are actually teaching students to read. As discussed previously, teachers' practices and perspectives are not mirror images of those described in the literature. Instead they are uniquely multi-theoretical or eclectic, and variously responsive to a number of internal and external factors.

Because current meaning-based perspectives of reading instruction are difficult to codify and define, both the reliability and the validity of the meaning-based method being studied in comparative research can be problematic. Stahl and Miller's (1989) meta-analysis of whole language and traditional approaches of instruction was essentially dismissed by meaning-based researchers on grounds of false identity (McGee & Lomax, 1990). Regarding the language experience approach as whole language was deemed inaccurate, and findings from the meta-analysis were differentially received by reading researchers. Similarly, designation of method is not always a rigorous process in methods comparison research and is oftentimes a matter of the teacher's self-report or the researcher's judgement. Such a procedure invites speculation about the actual meaning of categories and renders any cross-study conclusions uncertain. A recently completed doctoral study (Dubert, 1992) set out to compare two apparently different methodologies, but abandoned the prospect of any valid comparison after extended observation revealed the tenuousness of any distinctions. Comparative reading studies including whole language as one approach also trigger debate about educational goals ranging from standardized measurable performance to one's world vision (Harste, 1994; McKenna, 1994).

Adjustments Made in This Study

In conclusion, while studies of teaching grounded in cognition rather than behaviorism provide a much deeper and more reliable description of how teachers teach, few of these studies link instruction and

learning. Studies which do investigate this relationship are affected by ideological and definitional limitations. Based on these limitations, some ways of improving the study of reading instruction as well as the study of the relationship between instruction and achievement were implemented in this study. One adjustment was not assuming a dichotomous view of instruction. Instead a more accurate, and consequently complex, description of the nature and relationship of the constituents of reading instruction was derived from the data. Another improvement was to premise instruction in teacher cognition, thus assuming teacher control of classroom activities and personal perspectives. It is important to note that any means of improvement were possible only within the constraints of the IEA Reading Literacy Study data. These limitations will be discussed both later in this chapter and in the methodology chapter.

Research Questions

All research questions refer to questionnaires and tests used in the 1991 International Association for the Evaluation of Educational Achievement (IEA) Reading Literacy Study for Canada (BC), Population A (in Canada, grade 3 students and their teachers):

1. What reading instruction factors underlie teachers' responses to questionnaire items regarding their instructional practice?
2. Given derived reading instruction factors, what profiles can be developed to identify different homogeneous clusters of teachers?
3. Given such differentiated clusters of teachers, what differences exist among these groups on measures of teachers' characteristics and classroom conditions?
4. Given such differentiated clusters of teachers, what differences exist among these groups on measures of their students' reading experiences and reading achievement?

All variables are broadly defined at this time. Operational definitions are presented in Chapter IV. The definitions of terms used within this document are:

Instructional practice. Teachers' views about reading instruction, and classroom activities, specifically reading activities, instructional strategies, assessment method, and assessment focus.

Teacher characteristics. Teaching experience, education, general and educational readership, goals of reading program, assignment of homework, use of reading groups.

Classroom conditions. Resources, class composition (multigrade and number of English as second language students), principal engagement.

Student reading experiences. Home literacy materials, home reading interactions, voluntary reading, self-rating as reader, and perception of literacy development.

Reading achievement. Score in each of four domains: word recognition, narrative, expository, and document.

Research Problem

In describing reading instruction in Canada (BC), this study assumes a cognitive view of teaching, as well as provides a means of representing some of the complexities of instruction. Specifically, this study identifies factors underlying reading instruction both singly and in relationship to each other in terms of three major perspectives delineated in the field and differentiates teachers grouped by their factor scores on two teacher and two student measures. Specific objectives of my study include: one, to identify and describe the factors that underlie teachers' self-professed practices and views of reading instruction; two, to identify and describe homogenous groups of teachers based on these factors; three, to examine variance between teacher groups in terms of teacher characteristics and teaching conditions; and four, to examine variance between teacher groups in terms of their students' reading experiences and reading proficiency.

Delineating the Research Problem

A correlational research design was used to identify factors of reading instruction in British Columbia, to differentiate homogenous groups of teachers based on these factors, and to correlate other teacher and student measures with these groups. Data consisted of a) grade three teachers' responses to a questionnaire consisting of background and instructional variables, b) their students' responses to a background questionnaire, and c) the students' scores on a reading achievement test. Analysis was planned in two stages, exploratory followed by confirmatory. Exploratory factor and cluster analyses were used initially to simplify the teacher data about reading instruction. Instructional constructs were derived from

first- and second-order factor analyses of teachers' responses to five main sections of the teacher questionnaire pertaining to their views of reading instruction (one section) and their classroom practices (four sections). Specifically, data for this stage of analysis included teachers' responses to questionnaire items about a) views of reading instruction and b) classroom practices related to reading activities, instructional strategies, assessment method and assessment focus. Individual instructional profiles based on the components of second-order factor scores were produced for each teacher, followed by the creation of homogenous groups of teachers. Finally, variance between teacher groups in terms of teaching conditions, teacher characteristics, their students' reading experiences, and their students' reading proficiency was determined.

Overview of Theoretical Frameworks

Two interpretative frameworks were used in this study, one from the study of teaching and the other from reading curriculum and instruction. Based on the current cognitive perspective in the study of teaching, this study viewed teacher knowledge as the lens through which to understand instruction. The constituents of teacher knowledge that were of interest were the major designations of approaches to reading instruction identified in the literature—traditional, whole language, and strategic reading. I will first introduce the theory of teacher cognition, and follow with an overview of the literature of reading instruction.

Teacher Knowledge

Teacher cognition, the current perspective in the study of teaching, provided one interpretative framework for describing reading instruction in this study. While early work in teacher cognition tended to focus on teachers' beliefs or implicit knowledge (Duffy, 1977; Harste & Burke, 1977), current work centers on teachers' conscious knowledge (Shulman, 1986b, 1987). Shulman's model stresses teachers' specific subject knowledge in relation to general pedagogical knowledge emphasized in past perspectives of teacher research. However, recent studies based on his model are referenced in constructivism (e.g., Grossman, 1990). Components of teacher knowledge include assumptions about the particular subject and how students develop in that subject as well as actual classroom activities. The research program grounded

in teacher cognition is shaping a range of perspectives on teachers' knowledge which assume teachers teach from a base of knowledge, the nature of which is distinct from theoretical knowledge. This knowledge is variously labelled pedagogical content knowledge (Shulman, 1986b), personal professional theory (Grossman, 1990), and teachers' practical knowledge (Elbaz, 1983). My study uses the term "teachers' personal practical knowledge of reading instruction" to capture both the unique nature and the experiential source of teachers' knowledge/instruction.

Regarding teachers' knowledge as the core of instruction illuminates teachers' tendency to eclecticism demonstrated in much current research. Two major influences on teachers' knowledge of reading instruction are its multiple sources and the contextual nature of teaching. Teachers' present knowledge most often reflects their past experiences in learning to read or in learning to teach reading (Feng, 1992; Goodlad, 1990; Levande, 1990; Richardson & Harris, 1988); it least often reflects ideas encountered during professional development activities (Hollings, Reutzel, Ray, & Weeks, 1990).

The numerous and complex contextual variables of instruction require teachers to make decisions responsive to those variables. Variables ranging from individual students' needs and abilities to administrative policy affect how teachers shape instruction (Buckles, 1992; Freeman, Freeman & Fennacy, 1993; Moss, 1990; Pace, 1992). These factors of teachers' knowledge invite eclecticism—or perhaps more accurately, pragmatism (Moorman et al., 1994; McKenna, Robinson & Miller, 1994). Additionally, the nature of knowledge as an active process rather than a static product means teachers are constantly reconstructing understandings of reading development and instruction (Hiebert & Colt, 1989). In this way, instructional eclecticism is a reflection of the nature of knowledge. In sum, teachers' personal practical knowledge of reading instruction is commonly a conservative hybrid of personal and theoretical perspectives orchestrated in response to the complexities of teaching. One chapter of the literature review for this study (chapter three) situates teacher cognition in the historical context of the study of teaching and extends the discussion of teacher knowledge begun in this section.

Perspectives of Reading Instruction

Three major perspectives of reading instruction were used to describe teachers' personal practical knowledge of reading instruction: skills-based (or traditional), whole language, and strategic reading. The

historical dichotomies of code-emphasis and meaning-emphasis continue to demarcate current perspectives, although several meaning-emphasis perspectives have been distinguished (e.g., literature-based, language experience approach, whole language, communication-based, strategic reading). Embedded in each major perspective are different views of the reading process as well as different assumptions of learning and teaching. However, it is ironic to note that both code-emphasis and meaning-emphasis positions are premised on gaining control—educators "trained in scientific pedagogy, could gain control of education" (Venezky, 1984, p. 17), and teachers working with the New Literacy would "(reassert) control of the work that goes in the class, even as (they attempt) to hand a greater part of the locus of meaning over to the student" (Willinsky, 1990, p. x). Such various interpretations of apparently similar goals bespeak the critical place of ideology.

Clearly associated with the task-analytic and behaviorist premises of earlier educational psychology (Langer & Allington, 1992), the skills-based perspective is commonly termed the traditional perspective. This perspective tends to view reading as a mechanistic, passive, and solitary process (Gough, 1985; LaBerge & Samuels, 1985), and the path of reading development proceeding from parts to whole with the student's progress determined by mastery of hierarchical skills contained in graded materials, along with the teacher's careful monitoring of errors to insure fluency and comprehension (Dole, Duffy, Roehler & Pearson, 1991; Langer, 1984).

The other two perspectives used in my study are meaning-based. Both perspectives foreground the reader's construction of meaning in learning to read. In contrast to the single behaviorist base of the traditional perspective, whole language and strategic reading perspectives of reading instruction have developed from recent advances in cognitive psychology, social learning theory, and child language development (see Y. Goodman, 1989 for discussion of roots of whole language; K. Goodman, 1989 and Shapiro, 1994 for discussion of the research base for whole language, and Dole et al., 1991 for discussion of the evolution of strategic reading). Both meaning-based perspectives share more similarities than differences. For example, both premise the centrality of meaning, the active construction of meaning, the relationship between language and thought, and the importance of contexts. However, whole language explicitly assumes interrelationships between reading and other modes of language development. Both perspectives tend to emphasize different views of the reading process—whole language a top down or

contextual view, and strategic reading an interactive view. Instructional recommendations for both perspectives include the use of authentic texts, social interaction, and student-centered teaching and learning. Whole language also stresses the provision of rich literacy environments, contextualized instruction, integration of oral and written language development, and moving from the whole to the parts of language. A marked focus of strategic reading is development of students' control of higher level reading strategies and the frequent need for direct instruction to accomplish this.

The above points are generalized and gross differences made for the purposes of discrimination. Recent analyses of whole language literature (Bergenson, 1990; Moorman et al., 1994) demonstrate the importance of perspective and methodology in interpreting findings from such attempts to bring order and definition to the field. For example, the fact that Moorman et al. used only selected refereed journals to define whole language eliminated the inclusion of other views and clearly shaped the findings. Similarly, the use of such methods as deconstructionism (Moorman et al., 1994) or reductionism (Bergenson, 1991) affect any findings or conclusions about the characteristics of whole language. Finally, the proliferation of whole language research evidenced in the increasing number of journal articles and dissertations over the last five years has most certainly served to expand and elaborate rather than standardize the meaning of whole language. These underlying factors of the fluid borders of meaning-based perspectives particularly need to be kept in mind in any comparative discussion. Chapter Two of this study reviews more comprehensively the foundations, particular assumptions, and issues of each of these perspectives, as well as acknowledges their commonalities.

Importance of the Study

Findings from my study are significant at both the provincial and international level. Specifically, this study provides a careful description of classroom reading instruction in Canada (BC) and augments the international literature of comparative reading instruction.

The description of reading instruction provided by this study serves as a benchmark assessment of current reading instruction in B.C. Many researchers lament that despite prevalent theoretical assumptions of reading as a meaning-based, constructive process and despite the identification of supportive instructional actions, teachers maintain a skills-based curriculum and behaviorist methods of instruction (Langer &

Allington, 1992; Shannon, 1989). On the other hand, current research in teaching highlights the role of teacher knowledge in curriculum and instruction (Grossman, 1990; Shulman, 1986b, 1987), the centrality of conceptual change in instructional change (Fullan, 1982, 1993; Gallagher, Goudvis & Pearson, 1988; Richardson, 1990), and the dialectical, transformative process by which teachers advance their knowledge (Duffy, 1991; Gallaego & Hollingsworth, 1992; Roehler & Putnam, 1986). This research points clearly to a major principle of effective instructional change: to work from what teachers already know (Fenstermacher & Richardson, 1993; Richardson, 1990). Consequently, describing teachers' knowledge of reading instruction in British Columbia enables professional development efforts to be directed towards teachers' active evolution of knowledge rather than passive reception of outsiders' expertise. Findings from this study can provide points of reference for future assessments of reading instruction. Also at the provincial level, identifying any additional variables of teachers' personal practical knowledge of reading instruction assists planning of teacher training courses and professional development activities.

At the international level, this study will contribute to the presently limited field of comparative reading instruction. A major goal of international studies is to study commonalities—in the case of the IEA Reading Literacy Study, levels of literacy achievement and variables of literacy. Some findings from the IEA study have been reported (Elley, 1992; Lundberg & Linnakyla, 1993; Postlethwaite & Ross, 1992). However, focusing on commonalities on such a large scale invites reductionism and generalities (Stahl, Higgenson & King, 1993). To guard against such limitations, another goal of international studies should be to study diversity (Lundberg & Linnakyla, 1993). It is in this context that my study will contribute to comparative reading instruction. The field currently relies on a few classics (Downing, 1973; Thorndike, 1973). While there have been some contributions recently (Malmquist, 1982; Hladczuk & Eller, 1992), the field is sorely in need of development (Stahl et al., 1993). It is important to point out as well that the depth and complexity of analyses carried out on data of one educational system is not possible at the international level. That is, while international analysis provides some useful findings about individual education systems, more complete and detailed understandings derive from national analyses. Finally, the analytical procedures used to investigate instruction and its relationships to other teacher and student variables in my study could serve as a model for investigations by other educational systems and eventually as a means of cross-national studies.

In sum, this study does three things: a) enhances understanding of current reading instruction in one education system while simultaneously providing a fruitful base for professional development efforts; b) contributes to the literature of comparative reading instruction; and c) offers a model of data analysis to other IEA participants other than that presented in international reports.

Limitations of the Study

Findings based on data obtained from such a large-scale, closed-items survey are limited. Two main kinds of limitations concern validity of the research instruments and method of inquiry.

Construct validity of measures used in large scale assessments is a major concern. Despite concerted efforts to reflect current theory, construction of these measures is characterized more by compromise than by theoretical integrity (Bruce, Osborn, & Commeyras, 1993). It is not surprising that the 1991 IEA Reading Literacy Study has been the subject of such criticism (McLean, 1990). Criticisms are generally directed at the grossness of the measures and the narrow product focus of student literacy measures. These criticisms will be explained further in the methodology chapter. For now it is important to note the extreme practical difficulties in conducting an international study, ranging from the diversity of viewpoints held by its numerous designers to the constraints of time and money, along with recognizing successful attempts to reflect current theory.

The form of response, particularly for the teacher data, also needs to be considered in reporting findings. Compared to direct observation and/or inquiry-oriented methods, the researcher sacrifices both depth and validity when data consist of responses to closed items. First, data is limited to responses to broad indicators at one moment in time. Second, the guarantee of anonymity makes a compliance effect possible particularly with such a controversial topic as the best way to teach reading. The IEA admits to the pressure teachers may have felt to represent themselves according to what they perceive the researchers deem "correct" rather than accurately. A recent IEA report claims that a compliance effect was almost certainly present at the international level, where low scoring countries reported high levels of modern teaching (Lundberg & Linnakyla, 1993). Similarly, but at a less conscious level, interpretation of the data should consider likely differences between what Goodlad (1982) calls the perceived and the operational curriculum—i.e., what teachers report they are doing may differ from what they are actually doing. In

other words, self-reported practices or behaviors are not the same as behaviors that might be observed thus adding another limitation concerning validity.

Two final conclusions concern the population and the methods of data analysis. First, all findings from this study are limited to grade three teachers in British Columbia and their students. Second, one must interpret findings from even the most careful correlational study cautiously. Evidence of causal relationships cannot be implied from correlational research, but needs to be confirmed by experimental studies (Borg & Gall, 1983). In sum, findings about grade three reading instruction in Canada (BC) presented in this study are subject to the validity constraints of internationally-defined variables, product outcomes of students' literacy development, the human propensity for inaccurate reporting, and the lure of seeing causes in correlations.

Chapter Summary and Overview of the Following Chapters

In this chapter I have introduced the purpose and background of my study, delineated the research problem and questions, and discussed the importance and limitations of the study. The literature review is divided into two chapters. Chapter II focuses on dominant perspectives in current reading instruction. Chapter III discusses influential research programs in the study of teaching. Chapter IV explains the research methodology and statistical procedures used in the data analysis. Chapter V reports results of statistical analyses of each research question. Chapter VI discusses the meaning of the results of each research question in the context of current literature in both reading instruction and the study of teaching. Chapter VII summarizes findings from each research question and draws conclusions from the major findings as well as discusses directions for future research.

CHAPTER II: PERSPECTIVES ON READING INSTRUCTION

The purpose of this study is to identify factors underlying reading instruction, describe groups of teachers based on these factors, and examine other teacher and student variables of these teacher groups. Interpretation of factors that underlie reading instruction and teacher groups are based on major perspectives in the literature of reading instruction. Current reading methodology textbooks identify three major perspectives of reading instruction (Cooper, 1993; McGee & Richgels, 1990; Vacca & Vacca, 1991). While these classifications are more theoretical constructs than practical reality, they serve as useful frames for describing teachers' personal practical knowledge of reading instruction.

The field of reading instruction has long distinguished between code-emphasis and meaning-emphasis perspectives (Chall, 1967; Smith, 1965). The three major current perspectives used in this study are also based on this distinction. One perspective is that of code-emphasis or skills-based, the other two perspectives are meaning-emphasis or holistic. The code-emphasis or skills-based perspective is commonly equated with traditional reading instruction. Traditional reading instruction represents a task-analytic, behavioral conception of teaching reading which in turn is derived from turn of the century associationist psychology. This perspective is neatly summarized as "skill and drill." The two meaning-emphasis perspectives, whole language and strategic reading, relate to more recent cognitive and sociocognitive views of reading and learning to read. Both meaning-based perspectives view reading as a complex, holistic process during which readers actively construct meaning from text. Learning to read, then, involves increasing competency with meaning-making processes. While both perspectives are evolving towards rather than away from each other, their distinctive roots and assumptions about learning to read continue to differentiate them at this time.

Teachers in schools today have been variously influenced by traditional, whole language, and strategic perspectives of reading instruction. Teachers' own perspectives—or what in this study is called their personal practical knowledge of reading instruction—have developed from a number of sources. Main sources of teachers' personal practical knowledge of reading instruction include how they were taught to read, views and methods presented in their teacher training, knowledge gained through teaching experience, and professional development (Goodlad, 1990; Levande, 1990; Richardson & Hamilton, 1988). While it is unlikely that one perspective will account for each source of a teachers' knowledge, it is more likely that two or all three perspectives will be differentially influential. Thus, a teacher may have been taught to read with a traditional perspective, been trained in whole language, combined whole language and traditional perspectives in her own practice, read extensively on whole language, and been directed to implement strategic reading. For these reasons, a teacher's personal practical knowledge of reading instruction is more likely to be predominantly, rather than purely, one or another perspective.

This chapter discusses traditional, whole language, and strategic perspectives of reading instruction in terms of a) models and views of the reading process most influential to each perspective, b) curriculum and instruction, and c) contentious issues associated with each perspective. Discussion of each of these matters will be limited to aspects relevant to available IEA data. Readers familiar with these perspectives will undoubtedly notice the selective discussion of key assumptions and curricular implications. In other words, the following discussion is limited to dimensions of comparative reading instruction contained in the teacher data. Finally, although there are likely as many interpretations of each perspective as there are individual educators, the following explanations are based on the most extremely representative aspects of each perspective for the purpose of maintaining their distinctions. The chapter concludes with a section on similarities between the three major perspectives. Main points of the discussion about each of the three perspectives are outlined in Table 1. Since the literature review both describes and compares perspectives of reading instruction, the reader may find Table 1 a helpful point of reference throughout the chapter.

Traditional Perspective of Reading Instruction

The deepest roots of the traditional perspective in reading instruction are found in the work of E.L. Thorndike (1917, 1962) and W.S. Gray (1919). Enduring influences from early educational psychology

Table 1

Comparative Assumptions of Traditional, Whole Language, and Strategic Reading Perspectives of Reading Instruction

Assumption Focus	Perspective		
	Traditional	Whole Language	Strategic Reading
Theoretical Base	Associationist psychology; Behaviorism; Task-analysis	Psychosociolinguistics Natural/communicative view of language development	Current comprehension theory/Cognitive psychology: schema theory, metacognition
Reading Process: Structure and Activity	Bottom-up; Sum of the parts Analytical	Top-down Generative	Interactive Transactive
Substance of Curriculum	Discrete skills; Scope and sequence structure	Authentic communication	Range of flexible, adaptable strategies
Goal of Curriculum	Skills mastery	Individual development and empowerment	Thoughtful reader
Method of instruction	Teacher-centered; Drill and practice; Direct instruction	Student-centered; Environmental support, meaningful practice	Student-centered; Explicit instruction
Role of Teacher	Task director; Corrector/evaluator of student performance	Facilitator; Provider of rich literacy environment	Facilitator; Deliberate shift from teacher to student responsibility
Comprehension Development	Caught	Natural	Taught
Curricular Materials	Imposed & structured; Basals	Derived and authentic; Literature and literacy events	Literature
Control of Curriculum	Program/Teacher	Student and Teacher	Teacher and Student
Source and Nature of Meaning	Text/Teacher Objective	Individual Plausible	Individual-Text Most probable
View of Teacher	Technician	Professional	Professional
View of Learner	Normative	Individual	Individual
Focus of Assessment	Product	Process	Process

and reading research included objective measures of student achievement, associationist laws of learning, and tightly sequenced reading materials contained within a skills management system. During the middle of the century, the development of behaviorist learning theory along with reading curricula based on hierarchical skill acquisition (e.g., Russell et al., 1951) simply enforced and refined dominant assumptions, reaching a pinnacle during the 1970's in the Competency-based Education Movement. For many teachers today assumptions underlying the traditional perspective of reading instruction are those with which they themselves learned to read, were taught to teach reading, and were strengthened in their own teaching. As a universal legacy, the influence of the traditional perspective of reading instruction is deeply entrenched in present-day classrooms (Goodman, Shannon & Murphy, 1987; Langer, 1984; Shannon, 1989).

Influential Models of the Reading Process on the Traditional Perspective of Reading Instruction

Although historically traditional reading instruction was sustained by belief rather than research (Calfée & Drum, 1978), the introduction of information processing models of reading lent scientific support to the hierarchical skills curriculum. Regarded as bottom-up or direct perception models, these early cognitive models of reading (Gough, 1972; LaBerge & Samuels, 1974) focused on the reader's perceptions and interpretations of graphic or visual symbols. In these models processing proceeds in a linear fashion and progresses from small to increasingly larger parts. The more conservative model (Gough, 1972) presented an invariant sequence of decoding: from iconic features to letters to spelling patterns to visual word representations to word meanings and finally to word group meanings. Whereas Gough's model disallowed any skipping within the serial process, LaBerge & Samuels (1974) introduced the possibility and desirability of automaticity at some points of the reading process. For example, automatic word recognition would eliminate the need to decode each word from the iconic feature stage.

Information processing models of the reading process strengthened Gray's task-analytic conception of reading instruction—that is, the belief that the best way to teach something is to break it down into its constituent parts (i.e. skills in reading), then proceed to teach from the smallest or simplest parts to progressively more complex parts. The link between theory and practice was clearly spelled out:

. . . we view reading acquisition as a series of skills, regardless how it appears to the fluent reader. Pedagogically, we favor the approach which singles out these skills for testing and training and then attempts to sequence them in appropriate ways (LaBerge & Samuels, 1985, p. 714).

Thus, early work in information processing models of reading facilitated and validated the continued development of a sequential, hierarchical skills reading curriculum.

Curriculum and Instruction in the Traditional Perspective of Reading Instruction

The traditional reading curriculum consisted of two large "bundles of skills"—one bundle being decoding, and the other comprehension. Each skill was further broken down into "subskills", which in turn were further differentiated into smaller and smaller parts. Together, the parts constituted the "essential skills in reading."

Within the grand hierarchical scheme, decoding was requisite to comprehension. Referred to as the "assembly line model of skill acquisition" (Guthrie, 1973), a traditional curriculum assumed the sum of the parts would equal the whole—word recognition in regards to the decoding curriculum, and ultimately, reading comprehension. One review of traditional comprehension instruction identifies its main assumptions:

novice readers acquire a set of hierarchical subskills that sequentially build toward comprehension ability. Once the skills have been mastered, readers are viewed as experts who comprehend what they read. In this view, readers are passive recipients of information in the text. Meaning resides in the text itself, and the goal of the reader is to reproduce that meaning (Dole et al., 1991, p. 241).

Decoding skills consisted of first, individual grapheme-phoneme relationships, then grapheme-phoneme combinations (blends, digraphs), and finally, word recognition. Reading unfamiliar words was a process of phonemic analysis, the goal of which was to sound out the word. Vocabulary was controlled to correspond to the decoding skills being learned. Comprehension instruction followed mastery of decoding. Comprehension skills began with lower level skills such as sequencing events and progressively proceeded to higher level skills such as predicting outcomes and finding main ideas. Substantively, then, students learned to read by structural analysis, the objects of analysis being words and messages. And

procedurally, learning was a matter of sequentially mastering the hierarchically-ordered subskills until mastery of all the parts made for mastery of the whole. Criterion-referenced tests served as gatekeepers to learning the next new skill.

Scientifically designed, skills-based reading curricula were packaged into "teacher-proof" reading programs. Components of these packages were student readers or basal readers, student exercise books, and teacher guides. To insure continuity in skill development through the elementary grades, scope and sequence charts dictated the time and order in which skills should be acquired by students within and across grade levels. The format for reading lessons accompanying each basal story was uniform within and across reading programs. The teacher gave a directed reading activity, students read a basal story, then practiced the focal skills in workbooks, and sometimes followed up with extension activities. Authored by leading researchers and "experts" in reading education, the validity of basal reading programs was clinched.

The rigidly conceived hierarchy of skills assumed all students must acquire the same skills in the same order. Students were commonly grouped by reading ability, determined by scores on tests accompanying the basal program. Although intended to individualize instruction and insure successful mastery of all requisite reading skills, the effects of ability grouping are generally concluded to be negative (Hiebert, 1983). Negative effects include differential instructional treatment (Allington, 1980, 1983) and educational sorting (Slavin, 1987).

Teaching was both a matter of shaping overt behavior via reinforcement within a stimulus-response (S-R) cycle and evaluating student performance of low level skills (Roehler & Duffy, 1991, p. 861). In reading then, teachers focussed on monitoring students' mastery of pre-determined word recognition and comprehension skills. Instruction was basically a process of diagnosis and prescription:

By using a management system the teacher can select specific objectives to be taught, monitor pupils' learning progress continuously, and diagnose the source of individual learning problems, prescribe additional instruction and meet pupils' needs and make sure the pupils have achieved proficiency in skill objectives (Ginn 720, 1980, Teachers Guide, in deCastell & Luke, 1986, p. 102).

Contentious Issues Related to the Traditional Perspective of Reading Instruction

Many of the primary assumptions of traditional reading instruction challenged by meaning-based perspectives will be discussed in later sections of this chapter. A number of issues are relevant to review now. These issues concern one, the constituents and order of comprehension development; two, the validity of scope and sequence representations of reading acquisition; three, contextualized word instruction; four, the drill and practice method of instruction; and five, the place of basal programs in current instruction.

Constituents and Order of Comprehension Development

Concurrent with the development of holistic and interactive models of the reading process, some researchers questioned the existence of reading skill hierarchies even during their peak of acceptance.

Rosenshine (1980) summarizes the literature on the topic:

1. It is difficult to confidently put forth any set of discrete skills.
2. Comprehension skills are simply not taught in a hierarchical fashion.
3. It is not clear whether all, or even any, of the skill exercises in reading comprehension are essential or necessary.

Following on the last point Samuels (1976) claimed that "the sad truth is that the task (reading) is so complex that a validated reading hierarchy does not exist" (p. 174). Skepticism of scope and sequence assumptions led Rosenshine (1980) to hypothesize that "it is possible that students who only read stories might do just as well on comprehension tests as students who completed the exercises" (p. 52).

Validity of Scope and Sequence Representations of Reading Acquisition

Traditional reading instruction is commonly criticized for its lack of research support. Stennett, Smyth, & Hardy (1975) faulted the popular reading programs for failing to provide "a sound rationale or adequate documentation for either the relevance of their skill content or the sequence of instruction" (pp. 223-224). That such structures provided powerful templates of reading instruction attests to the degree to which they had become common and unquestioned knowledge (Goodman et al., 1987). In contrast, and in accordance with current holistic and interactive models of the reading process, the influential report of the Commission on Reading (Anderson et al., 1985) claims that "children should be given all the elements

necessary for constructing meaning" as well as be made aware that "reading is always directed toward meaning" (p. 44).

Contextualizing the Word in Comprehension Instruction

A related concern is the decontextualized manner in which students develop word recognition in traditional reading instruction. Students are typically provided with lists of words based on structural patterns rather than personal meaning. The importance of word recognition in comprehension remains unquestioned (Davis, 1944, 1968). However, educators now stress students need to read words and all language patterns in meaningful contexts (Anderson et al., 1985).

Drill and Practice Instruction

Classroom observations of basal programs found instruction and learning more accurately consisted of drill and practice, rather than explanation and instruction (Duffy & Roehler, 1982; Durkin, 1978-1979). This approach to teaching has been termed the "exercise model" (Bereiter & Scardamalia, 1987). Quite literally students spent most of the reading instructional time doing exercises in their workbooks. Thus students were actually practicing skills rather than reading, and being drilled to elicit correct responses rather than being taught. Durkin's (1978-1979) major findings that teachers spent most of the instructional time assessing students' (low level) responses and that comprehension instruction was more a matter of "mentioning" followed by hope that excessive skill practice will transform into competency became the impetus for concerted improvement of comprehension instruction (Pearson & Gallagher, 1983).

The Place of Basal Programs

Researchers in the United States claim 90% of their classrooms remain dominated by basal programs (Langer & Allington, 1992; Shannon, 1989). In Canada, despite our publicized favoritism of literature-based programs (McConaughy, 1988), publishers of Canadian basal programs pose a major obstacle to teachers' transitions to whole language (Maguire, 1989). Some unsuspecting teachers may equate use of these programs with whole language practice when in fact "most of these materials are based on a paradigm that is antithetical to the whole language paradigm" (Froese, 1994, p. 6). A lively debate among North

American educators has developed around the place of basals (see special issue of Elementary School Journal, January 1987). And the debate is not simply a practical matter of perpetuation (Dole, Rogers, & Osborn, 1987), improvement (Duffy, Roehler & Putnam, 1987) or abandonment (Altwerger & Flores, 1987). Emotions run high in this debate and for some the continued influence of basals is tantamount to educational disaster:

. . . basal readers not only dominate reading instruction but even when they are not physically present they exert a thought style on how teachers and children operate in classrooms. Semotically, they signal a particular set of activities involving a limited range of thinking. They are as dangerous to the mental health and critical thinking abilities of teachers as they are to children (Harste, 1987, p. 270).

The deskilling of teachers (Shannon, 1987) is one of the most heated accusations in the basal debate. However, some evidence indicates slavish adherence to the text program is not necessarily the case (Barr & Sadow, 1989). Rather, text programs are more accurately "tools in managing larger agendas rather than driving forces in themselves" (Sosniak & Stodolsky, 1993, p. 271). However, their continued influence in present day classrooms qualifies traditional instruction as one of the current major perspectives.

Summary of Traditional Perspective of Reading Instruction

The traditional perspective of reading instruction is based on behaviorist views of learning and teaching, the primacy of visual information and word recognition in the reading process, and a sequential, hierarchial skills-based curriculum. These premises, and their implications, have been challenged by new findings and assumptions from both mainstream and alternative perspectives of literacy education.

Whole Language Perspective of Reading Instruction

Whereas the traditional perspective in reading instruction question went unquestioned for decades, those advocating a meaning-emphasis perspective, epitomized in whole language, devote much effort to describing and distinguishing their assumptions from other perspectives. Some spell out underlying assumptions (Edelsky et al., 1991; Goodman, 1986a; Newman & Church, 1990); some offer definitions (Froese, 1994a), some describe representative practices (Goodman & Goodman, 1981; Goodman, 1986a; Watson & Crowley, 1988); and others compare and contrast whole language with other holistic approaches or child-centered perspectives to emphasize its uniqueness (Altwerger, Edelsky & Flores, 1987; Church

& Newman, 1990; Edelsky et al., 1991). Because whole language grounds itself primarily in theory, and secondarily in practice (Altwerger et al., 1987; Newman, 1985), definition and codification of classroom instruction are difficult, even undesirable (Edelsky et al., 1991). The same practices may be used in either whole language or traditional teaching; what counts is the teachers' knowledge: ". . . practices become whole language-like because the teacher has particular beliefs and intentions" (Altwerger et al., 1987, p. 145). Although this lack of specificity is a contentious issue for some (McKenna et al., 1990), it is a non-issue for whole language advocates (Edelsky, 1990).

Theoretical Foundations of Whole Language

Whole language is rooted in numerous disciplines and theoretical perspectives. However, its primary roots are those of psycholinguistics, transactive-psycholinguistics, and child language development. Other important theoretical foundations include Progressivism, sociolinguistics, semiotics, constructivism (including thought-language relationships and social learning theory), literary theory, and more recently critical theory. Since the assumptions of psycholinguistics and child language development are most relevant to the analysis and interpretation of the IEA teacher data, I will limit my discussion of the theoretical foundations of whole language to those disciplines. Such a selective discussion in no way dismisses the critical contributions of other components of whole language.

Psycholinguistics

Formulated by Ken Goodman and Frank Smith during the late 1960's and early 1970's, psycholinguistic views of the reading process oppose those of information processing models. Psycholinguistics refers to the "knowledge of various types of sequential probabilities of written text" (Cazden, 1982). Goodman (1967) categorized this knowledge into four hierarchially-ordered "cueing systems": graphophemic, lexical, syntactic, and semantic. Although viewing reading as a holistic, meaning-driven process, a psycholinguistic view emphasizes the reader's ability to minimize energy spent on the lower level processes of decoding in favor of constructing possible interpretations based on higher level processes. Indeed, the prominence of the "deep level process of identifying meaning either preceeds or makes unnecessary the process of identifying individual words" (Smith & Goodman, 1971, p. 179).

Instead, the reader, drawing on the four cuing systems, engages in a "psycholinguistic guessing game" all the while hypothesizing, testing, and reformulating meaning. It is the hypothesizing process driving comprehension, rather than the mechanical process of decoding text, which distinguishes the activities of readers in top-down and bottom-up views of reading: "Prediction through meaningfulness is the basis of language comprehension" (Smith, 1977, p. 388). Misreading, or "miscuing", is not regarded as a mistaken reading as long the process continues to produce sensible reading. In sum, a psycholinguistic view of reading decrees the supremacy of the higher order cuing systems and the hypothesizing nature of the reading process thus asserting the linguistic rather than graphic nature of reading.

Transactive-psycholinguistics

Goodman (1985, 1994) later expanded his psycholinguistic view to include assumptions from transactional reading theory. The transactive-psycholinguistic view contends the impact of both the reader's knowledge and experience as well as the role of contextual and nonprint cues. In this way, reading is a guessing game in which meaning is constructed by the reader, rather than directed by the text. Goodman (1985) explains that

meaning is not characteristic of texts. Rather texts are constructed by authors to be comprehended by readers . . . meaning does not pass between writer and reader. It is represented by a writer in a text and constructed from a text by a reader (p. 815).

Transactive reading theory developed primarily from literary theory, rather than studies of reading. Rosenblatt (1978) along with other reader response theorists upheld Dewey's notion that both the meaning of the text and the reader's experiences are recreated as a result of reading. Such positions as "the reader receives the text by composing it" (Iser, 1978); "the greatest texts allow for rewriting by the reader" (Barthes, 1974) and "it is the structured responses to the text by the reader, not the words alone, which constitute the literary work of art" (Rosenblatt, 1978, p. 16) argue for the active, creative role of the reader. Distinct in this view too is the notion of transitory meaning not just between readers but between repeated readings by individual readers. The many possible readings of readers and texts is determined less by cognitive processes than by personal, social and cultural variables. Thus while cognitively viewing

reading as more similar to composing, transactive theories of reading proclaim the influence of readers' resources on meaning.

Child Language Development

The advancement of qualitative research methods facilitated development of perspectives of language acquisition distinct from prevailing laboratory-based theories. Naturalistic studies of language and literacy development in nonclassroom settings illustrated how children learn oral and written language without formal instruction (e.g., Baghdan, 1984; Bissex, 1981; Harste, Woodward, Burke, 1984; Taylor, 1983). The portrait of how children perceive and interpret language, how they master new uses and forms, and their roles and status as learners contrasted sharply with traditional beliefs. These studies demonstrated that children perceive and interpret language holistically with a view to the message, and not as abstracted fragments for mechanical purposes. This research described how language learners expand and refine the uses and consequentially, the forms of language by actual, authentic use, not by drill and practice. As learners, children actively explore, construct, and test hypotheses about language. Congruent with socioconstructivist views of learning (Vygotsky, 1978), these studies also describe how adults implicitly support children's approaches to and uses of language, as well as explicitly encourage behaviors which empower children as language users (Snow & Ninio, 1986; Wells, 1986).

Reading Curriculum and Instruction in the Whole Language

Perspective

Whole language reading instruction revolves around the general pedagogical principles of a) a learner-centered curriculum, b) active learners, and c) flexible boundaries for both learner and teacher roles, and school and out-of-school activities (Edelsky et al., 1991; Cambourne, 1988; Newman, 1985; Willinsky, 1990). Premises specific to reading instruction derived from psycholinguistic views of reading and language acquisition research include: one, language learning occurs through language use; two, written language develops like oral language—i.e., without formal instruction; three, learning progresses from whole to part; four, learning to read is learning to make sense of texts; and five, all language systems

are equal (Altweger et al., 1987; Goodman, 1986a; Goodman & Goodman, 1981; Smith & Goodman, 1971).

Consistent with findings from naturalistic studies of children's oral and written language development, whole language assumes reading is best developed when the learner is focused on meaning and use. Reading materials should be interesting and relevant to students' lives. They should be whole and real texts for authentic communication, not partial and contrived texts meant for skills mastery. Students read literature and teachers read literature to students everyday. The language arts are integrated, not separate parts of the curriculum. Students' reading development is supported by writing, listening, and speaking. Rather than directing reading acquisition, the teacher insures its natural unfolding.

While the above describes whole language curriculum and instruction very generally, the following section on contentious issues further explains major curricular and instructional matters in a whole language perspective of reading instruction.

Contentious Issues Related to the Whole Language Perspective of Reading Instruction

Whole language is most distinguished from traditional perspectives in terms of the facilitator role of the teacher, use of indirect instruction, a focus on a top-down or contextual view of reading, a de-skilled view of reading, and support of purist rather than eclectic practice. These aspects of whole language are central points of discussion amongst whole language and non-whole language educators (e.g., Adams, 1990; Smith, 1994).

Role of the Teacher

The whole language teacher is a facilitator rather than evaluator. This role is deeply tied to two philosophical tenets: "teachers reasserting control over the work that goes on in the class . . . and shift(ing) the control of literacy from the teacher to the student" (Willinsky, 1990, p. 8). Specifically, the teacher recreates authentic contexts of literacy development through providing a print-rich environment, and through indirect, rather than direct, instruction. It is in this vein that Goodman (1986b) said "Teaching doesn't make language learning happen; it supports its development . . . it can never control it" (p. 361).

Because this view of teaching is contrary to those of traditional perspectives, it is often interpreted as no teaching (Pearson, 1989). Newman and Church (1990) clarify the role of the teacher in whole language:

Teachers working from a whole language perspective are active participants in the learning context. We continually work at structuring an environment in which learners can engage in purposeful activities. We collect curriculum resources . . . We pose questions . . . We are constantly observing our students . . . (p.22).

Whole language educators acknowledge students are continuously learning. They do not accept that students need programmed instruction. Instead, whole language teachers are sensitive to the "teachable moment—when they (students) need and can make immediate use of the information" (Watson & Crowley, 1988, p. 257). Finally, in contrast to the vigilant monitoring of student mistakes in traditional reading instruction, whole language teachers "build on what readers are doing right, not what they are doing wrong" (ibid). While current learning theory supports all the above activities of the teacher, there is also a shift toward the need for more overt instruction in all aspects of reading (Pearson and Fielding, 1991). The research underlying this need will be discussed in the section on strategic reading.

Indirect Instruction

This issue is clearly related to the role of the teacher. The preference for indirect rather than direct instruction is thought by some to be the "key distinction separating whole language theorists from their counterparts" (McKenna et al., 1990, p. 4). Although this debate is usually framed around decoding or beginning reading instruction it carries implications for the whole reading program. Based largely on the premise that "the child is already programmed to read" (Smith & Goodman, 1971, p. 179-180), instruction is a matter of carrying out the activities described in the above section on the role of the teacher.

Goodman (1992) confidently claims "There is abundant research to show that direct instruction in phonics is neither necessary nor desirable" (p. 60). The belief in natural learning along with what is regarded as suspect research support underscores the strongly-held whole language tenets of environmentally-based language development, and the downplaying of overt instruction. However, an increasingly common conclusion concerning the value of direct instruction in beginning reading is summarized by Adams (1991):

The vast majority of studies indicated that approaches including intensive, explicit phonics instruction resulted in comprehension skills that are at least comparable to, and word recognition and spelling skills that are significantly better than those that do not . . . Approaches in which systematic code instruction is included along with meaningful connected reading result in superior reading achievement overall (p. 12).

Taking these conclusions one step further, others contend that a lack of direct instruction actually causes students to be at risk (Chall, 1989; Stahl & Miller, 1989; Thompson, 1992). Although the most acrimonious assaults on indirect instruction tend to refer to findings from teacher effectiveness supporting the superiority of direct instruction on improvement of student achievement (e.g., Peterson, 1979), more recent participants in the dialogue distinguish between traditional direct instruction and explicit instruction in strategies (Dole et al., 1991). This current conception of direct instruction does not appear to be favorable to whole language educators: "I suppose they view it as yet another application of heavy-handed, top-down, teacher-controlled instruction" (Pearson, 1989, p. 237). As noted earlier, distinctions between traditional and current notions of direct instruction will be discussed in the following section on strategic reading.

Top-down or Contextual Views of Reading

Whole language condemns the hierarchical skills-based approach to learning to read. In a whole language perspective, the nature of the reading process prohibits learning being formalized "in a prescribed sequence of behaviorally stated objectives embalmed in a set of instructional materials, programmed or otherwise" (Goodman, 1986b). Opposing traditional instruction, "learning to read is not learning to recognize words, it is learning to make sense of texts" (Goodman & Goodman, 1981, p. 6). Learning to make sense of texts means emphasizing higher level language structures and reading processes. Teachers guide students to focus on contextual cues, particularly semantic and pragmatic cues. Predicting on the basis of meaningfulness is stressed as a key reading process. Language learners are encouraged to generate and test hypotheses about language while engaged in real reading. Learners are given opportunities to explore, take risks and make choices with language while engaged in meaning-making. Approximations of meaning are more valued than correct and incorrect readings; similarly, mistakes are regarded as opportunities to learn.

Findings from recent studies of skilled readers along with results of methods comparison studies are used to refute the effectiveness of teaching reading based on top-down views of the reading process. Underlying these dismissals of context-based reading instruction is concern for the validity of the foundational findings (Goodman, 1965) of Goodman's psycholinguistic theory of reading (Thompson, 1992; Velluntino, 1991). While Goodman (1986) later claims that many traditional reading skills were arbitrarily chosen, and were deduced from studies of "rats and pigeons—or children who were treated in the research as rats and pigeons" (p. 9), alternative information from current studies feeds the flames of this historical debate.

Knowledge of the reading process has developed greatly since the introduction of psycholinguistic views. Summarizing findings from eye movement studies, Velluntino (1991) claimed "Skilled readers process virtually all of the words they encounter in connected text and typically all of the letters in these words" (p. 438). Velluntino also summarizes comparative studies of the reading process: "There is abundant evidence that language comprehension processes become fully operative in reading only when a certain degree of fluency in word identification has been achieved" (p. 438). Many researchers now accept that skilled readers do not by-pass lower order decoding processes. For skilled readers, those activities have become automatic. Additionally, findings from studies of skilled and novice or poor readers discredit the assumption that good readers rely on context. Current evidence shows that while proficient readers are skilled at decoding, they are less dependent on context than poor readers, who in turn are less skilled at decoding (Nicholson, Lillas, & Rzoska, 1988).

Stahl and Millers' (1989) meta-analysis of code-emphasis and meaning-emphasis approaches found that "whole language approaches may have an important function early in the process of learning to read, but that as the child's needs shift, they become less effective" (p. 111). Adams' (1990) exhaustive review of program comparison research concludes that approaches incorporating code-based instruction "result in comprehension skills that are at least comparable to, and word recognition and spelling skills that are significantly better than, those that do not" (p. 49). Similarly, Anderson et al. (1985) report that results of studies of whole language effects are inconsistent.

In the hands of very skillful teachers, the results can be excellent. But the average result is indifferent when compared to approaches typical in American classrooms, at least as gaged by performance on first- and second-grade standardized reading tests (p. 45).

A major obstacle to constructive dialogue in the debate concerns the measure of effectiveness. Whereas non-whole language researchers depend on measurable variables of achievement, whole language advocates counter with broader, more subjective criteria such as "the creation and sharing of experience" (Smith, 1988b, p. 97), "language, literacy, and power" (Shannon, 1994, p. 96), and "the kind of world you envision and the kind of person you want to be" (Harste, 1994, p. 145). Critics of whole language maintain, however, that

Effectiveness research based on new tests may lead to different results in the case of whole language, but the results based on traditional testing have afforded it no advantage (McKenna et al., 1990, p. 5).

A De-Skilled View of the Reading Process

Because whole language views reading as a holistic activity, it cannot be segmented into component parts and still be called reading . . . any "component subskill" of reading used when one is not actually reading (e.g., when one is doing exercises in decoding) works differently than it does when someone is really reading (Edelsky et al., 1991, p. 37).

Whole language educators are careful not to emphasize the learning of skills per se through context (Edelsky et al., 1991). That would be akin to dressing the wolf in sheep's clothing.

Whole language teachers do teach phonics but not as something separate from actual reading and writing. We might offer students some phonics hints when they are writing and aren't sure how to spell something, we might draw their attention to graphophonic cues after they've successfully figured out an unfamiliar word (Church & Newman, 1990, p. 21).

Opponents decry this "first aid" approach to learning skills and claim that teachers need to engage in systematic skill instruction (Thompson, 1992). For whole language educators, the issue is not a matter of the relative importance of lower and higher skills, but the fallacious concept of reading as a bundle of discrete skills.

Eclecticism: A Conscious Choice or a Subjugated Reality?

Clearly, the above contentious issues between whole language and other perspectives on reading instruction are inextricably intertwined confirming the integral consistency of each perspective. In this view, any hybridization would be a violation, to the extent that adherence to such purity would be life-threatening (Pearson, 1989). However, eclecticism is more prevalent in the classroom than purity (Maguire, 1989; O'Flavahan & McConnell, 1990; Walmsley & Adams, 1993), and is the last issue in the "great debate" I will address. Two areas of discussion in this issue concern (a) the desirability and (b) the factors of eclecticism.

The introduction of alternative premises and practices by whole language has naturally led teachers to reconsider their own personal practical knowledge of reading instruction. However, teachers' natural tendency toward eclecticism (Moorhead et al., 1994; McKenna et al., 1994) is poorly regarded by whole language advocates: "There is no eclecticism at the level of deep underlying beliefs" (Edelsky et al., 1991, p. 44). Leaders in whole language are strongly united on this position. Speaking of epistemological and pedagogical assumptions in general, Newman and Church (1990) explain:

Whole language isn't an add-on. It's not a frill. We can't do a little bit of Whole Language and leave everything else untouched. It's a radically different way of perceiving the relationships between knowledge and the knower, between compliance and responsibility, between learner and teacher, between teacher and administrator, between home and school (p. 26).

More specifically, Goodman (1989) justifies indirect instruction and relates a single theory-based pedagogy to professionalism:

One cannot reconcile direct instruction with natural learning. Meaningful, predictable, authentic texts are incompatible with carefully controlled vocabulary and decontextualized phonics instruction. Teachers have lived with contradictions, but they don't have to. Whole language teachers are evolving internally consistent views that enable them to make the instructional decisions necessary to support literacy development (p. 69).

Despite such "orders from the top" and the high profile of whole language groups, the actual proportion of teachers who describe themselves as whole language teachers varies widely. Based on self-reports, two studies conducted in the eastern and southern United States found 2.7% (Barry, 1992) and 4% (Gambrell, 1992) of teachers called themselves whole language teachers. In contrast, 55% of teachers in

a recent survey in British Columbia aligned themselves with whole language rather than traditional approaches to language arts (Scott & Butler, 1994). Similarly, when elementary teachers across Canada were asked to identify the most effective instructional approach in language arts, 40% claimed whole language, 8% claimed traditional, and 49% claimed a combination (Warren et al., 1993). Another study (Froese, 1995) found 55% of grade three teachers in British Columbia identified eclecticism as the approach most descriptive of their practice, while 23% named whole language. Finally, Maguire (1989) found that eclecticism was the most frequent response of Quebec teachers' transition to a provincial whole language curriculum.

Teacher and program change studies focussed on literacy instruction describe a process of evolving eclecticism rather than a clean move to another perspective (Pace, 1992; Scharer, 1992; Siera & Combs, 1990). Specifically, these studies identify a number of variables involved in instructional change including teacher beliefs, accountability, material availability, student response, and staff support. These studies will be reviewed in the next chapter on the study of teaching. For now, it is sufficient to note teachers' widely varying interpretations of whole language. Even after spelling out what whole language is and isn't (Altwerger et al., 1987, Edelsky et al., 1991; Newman & Church, 1990), teachers appear to misconstrue or re-construe whole language. For example, outstanding teachers who labelled themselves as whole language teachers also used direct instruction (Pressley & Rankin, 1993). Whole language teachers also "compromise(d), either tacking on Whole Language activities to an existing traditional program, or supplement(ed) their whole language program with traditional materials" (Walmsley & Adams, 1993, p. 278). Teachers professing a whole language perspective may continue to dwell on discrete skills, continue drill and practice learning activities, and rely on standardized testing for instructional decisions (Halpern & Craddock, 1992; Hoffman, Roser & Battle, 1993; Siera & Combs, 1990).

Eclecticism then can be explained by a number of contextual variables, or by misinterpretation. Others point to teachers' "straightforward functional pragmatism: Use what works, use whatever works best, and be prepared to use a variety of techniques in search of what will work for each student" (McKenna et al., 1994, p. 106). This explanation of and plea for eclecticism assumes teachers' conscious and thoughtful choices, in contrast to assumptions underlying instructional factors identified in teacher change research. Research continues to offer a variety of ways enabling students' literacy development.

Increasingly, educators promote varied instruction (Hiebert & Colt, 1989), and specifically, the combination (Helymsfeld, 1989; Slaughter, 1988), or preferably, the synthesis (Pearson, 1989; Smith & Wham, 1994; Spiegel, 1992) of whole language and direct instruction.

Perhaps the most significant contribution of whole language is acknowledgement of the role of theoretical understandings—in research and practice. Explicating one's premises about reading processes and reading development has become standard in discussions of instructional matters, even amongst whole language critics: "Why not use a cluster of techniques supported by research? It sounds reasonable, but the problems get back to how one views the acquisition of language, how one views models of the reading process . . . (McKenna, 1994, p. 56). This kind of thinking reflects a paradigmatic shift in reading instruction towards the critical role of one's perspective.

Strategic Reading Perspective of Reading Instruction

Current knowledge of the reading process, along with advances in learning theory, offer promising instructional implications, many of which are coming to fruition in classrooms. The field of reading instruction is moving beyond a debate, to a tempered consideration of multiple perspectives (e.g., Cazden, 1992; Hiebert & Colt, 1989; Langer, 1991). One of the most influential perspectives of modern reading instruction is strategic reading. Because this perspective is the least developed of the three discussed in this review, the discussion in this section will be limited to the theoretical foundations of strategic reading, including the field of comprehension instruction.

Theoretical Foundations of Strategic Reading Perspective of Reading Instruction

Strategic reading is grounded in current comprehension theory, which in turn is based on an interactive view of the reading process, schema theory, and metacognition. In the last twenty years developments in comprehension theory have challenged past views:

Whereas traditional views conceptualized reading as a discrete set of skills to be mastered, cognitively based views suggest a more holistic view of reading. Reading is seen as a process in which knowledge held by the reader interacts with textual information in the construction of meaning. Skilled readers use their stores of existing knowledge as well as a number of flexible strategies to construct a mental model of the text . . . Exemplary comprehension instruction derived from this view suggests a curriculum emphasizing readers' existing

knowledge and a set of reading strategies that good readers use in a metacognitive, regulatory way (Dole et al., 1991, p. 249).

I will briefly describe each of the key theoretical underpinnings of current comprehension theory before discussing comprehension instruction.

Interactive Models of Reading

Interactive models combine assumptions from bottom-up and top-down views of the reading process. Interactive models propose that readers use both visual and linguistic information, surface and deep structural meanings, and text data and reader resources to construct meaning (Ruddell & Speaker, 1985; Rumelhart, 1985). Based on evidence that "apprehension at one level (of meaning) can often depend on our apprehension of information at a higher level" (p. 735), Rumelhart questioned the validity of bottom-up theories and proposed instead an interactive model of processing. His model builds on the importance of patterning developed by psycholinguistic models, concomitantly emphasizing knowledge structures. Specifically, he introduced the existence of a "pattern synthesizer" which uses sensory, orthographic, lexical, syntactic, semantic, and pragmatic information to produce the "most probable interpretations" of texts.

The most significant contribution of Rumelhart's interactive model is acknowledgement of the limitations of "linear stage formalism that has served so well" and the promise in the presumption that "all these knowledge sources apply simultaneously and that our perceptions are the product of the simultaneous interactions among them all" (1985, p. 735). The other interactive model (Ruddell and Speaker, 1985) introduced the central role of knowledge utilization and control in the reading process, and identified a major instructional goal as "to aid the reader in developing conscious control of the reading process" (p. 786). This goal would be facilitated by work in metacognition and reading, discussed below, following the section on a schema-theoretic view of reading.

Schema Theory of Reading

Acceptance of the cognitive complexity of the reading process presented in interactive models stimulated further application of schema theory to reading (Adams & Collins, 1977; Anderson & Pearson,

1984). A schema theoretic view of reading comprehension views reading as "an active process of constructing meaning by connecting old knowledge with new information encountered in text" (Pearson, Roehler, Dole, & Duffy, 1992, p. 149). Schema are broadly defined as organized chunks of knowledge and experience, thus stressing the importance of nonvisual information in reading. Thus, schema are not static entities, but an

active principle in our memory (re-)organizing elements of recall into structured wholes. In perception and language understanding we interpret and recall all new information with respect to our established schemata, which are both cognitively and socially determined (VanDijk & Kintsch, 1985, p. 795).

Schema are usually classified as two types: content (or domain) and linguistic. Content schema are organized as scripts or frames. These schema may consist of common knowledge and experiences such as about restaurants, or more specialized knowledge such as mechanical engineering. Linguistic schema include knowledge about the multiple components and hierarchical organization of narrative and expository texts. Rumelhart (1980) describes the extensive range of knowledge within these classifications:

Schemata can represent knowledge at all levels—from ideologies and cultural truths to knowledge about what constitutes an appropriate sentence in our language, to knowledge about the meaning of a particular word, to knowledge about what patterns of excitations are associated with what letters of the alphabet. We have schemata to represent all levels of our experience at all levels of abstraction. Finally, our schemata are our knowledge (p. 41).

Early research in this area focussed on the role of readers' content knowledge in recall (Bartlett, 1932) and comprehension (Bransford & Johnson, 1972). More recent research examines the role of linguistic schemata (Taylor, 1982; vanDijk & Kintsch, 1983). Research on text structure has shown the particular influence of a reader's schema of textual macrostructures on comprehension and recall (Taylor & Beach, 1984). In general, the more the reader's schemata is developed and consistent with the text, the better the reader's comprehension and recall of the text. Additionally, the individual nature of schema insures that "Each of us prints a unique stamp on every act of reading we undertake" (Pearson et al., 1992, p. 149).

Metacognition and the Reading Process

Metacognitive theory developed from studies of experts and novices in many domains. These studies concluded that the "major distinction between experts and novices in any domain is self-controlled strategic behavior" (Paris, Lipson & Wixson, 1983, p. 294). Thus the key differences between novices and experts lie in the consciousness of their behaviors and the nature of those behaviors. These behaviors are commonly contrasted as skills and strategies. Whereas skills are highly routinized behaviors, strategies are "actions selected deliberately to achieve particular goals" (Paris, Wasik & Turner, 1991, p. 611).

Metacognitively-based conceptions of the reading process follow logically from schema-theoretic views. Metacognition refers to the conscious ability to think about thinking (Brown, Bransford, Ferrara & Campione, 1983; Flavell, 1978). Schemata are mental structures. Metacognitively-based views of reading assume that conscious thought about those structures facilitates comprehension (Brown, 1980; Baker & Brown, 1984). Consequently, initial work in this view of reading focused on readers' ability to activate relevant content schema before reading, and apply them during reading as a means of improving comprehension (e.g., Beck, Omanson & McKeowen, 1982).

Metacognitive theory has greatly influenced assumptions about expert reading comprehension. One set of assumptions concerns kinds of metacognitive knowledge involved in reading: declarative knowledge (knowing what—knowledge of the reading process), procedural knowledge (knowing how—controlling the reading process by applying strategies) and conditional knowledge (knowing why and when to apply strategies) (Paris et al., 1983). Another assumption points to the critical role of intention or self-regulatory mechanisms in strategic reading (Brown, 1982; Paris et al., 1983). A third group of assumptions describes the nature and constituent strategies of comprehension. That is, expert readers use a repertoire of strategies flexibly and recursively throughout the comprehension process. Strategies include previewing, generating questions, determining importance, inferencing, visualizing, summarizing, and monitoring construction of meaning (Dole et al., 1991; Paris et al., 1991; Pearson & Fielding, 1991; Pearson et al., 1992).

Comprehension Instruction

As noted in the beginning of this chapter, both whole language and strategic reading are classified as meaning-emphasis perspectives thus differentiation is not as clear as between whole language and

traditional perspectives. For purposes of this study, distinctions between whole language and strategic reading are made primarily on the basis of instructional emphasis of higher order cognitive processes.

Advances in comprehension instruction have been greatly influenced by Durkin's (1978-1979) study of comprehension instruction. She found checking the accuracy of students' responses (both oral and written) to be the main instructional activity rather than the demonstrative strategies emphasized in the literature. Results of the most recent NAEP (reading) in the United States which indicate an urgent need for instruction in higher-level reading abilities are also providing momentum for the development of strategic reading instruction.

Although there is little argument with the proposal that students acquire the behaviors of expert readers, two instructional issues affect implementation of strategic reading. One issue concerns the best time or age for beginning instruction, and the other more controversial issue concerns the manner of instruction—i.e., explicit instruction. Most leaders in modern comprehension instruction argue for holistic use of reading strategies at all levels: "We really do expect all readers of all ages to engage in all of these strategies at some level of sophistication (Pearson et al., 1992, p. 169). Some researchers include non-readers: "Even non-readers can be exposed to these strategies as they bridge speaking and listening with reading and writing" (Paris et al., 1991, p. 634). These leaders agree instruction is a matter of insuring the continuous development and extensive application of comprehension strategies (Paris et al., 1991; Pearson et al., 1992)

The most controversial issue related to this perspective is the recommendation for explicit instruction. Because of the level and complexity of the processes involved in strategic reading, most researchers agree that it cannot be learned incidentally, but rather needs to be taught explicitly (Pearson & Fielding, 1991; Pressley et al., 1989). Unlike traditional reading instruction, and like whole language, strategic reading is based on constructivist views of reading, prioritizing situated learning and authentic tasks. Unlike whole language, strategic reading instruction advocates explicit instruction. Following is one explanation of the difference between traditional and strategic reading instruction:

Ineffective instruction focussed on isolated skills and repeated practice on worksheets, whereas effective instruction orients students to the task of constructing meaning from text and provides a variety of tactics to use before, during, and after reading (Paris et al., 1991, p. 632).

The notion of direct instruction assumed by current views of comprehension instruction contrasts with former behaviorist notions embedded in teacher effectiveness (Pearson & Dole, 1987; Pearson & Gallagher, 1983; Pressley et al., 1991). These contrasts occur in one, the abstract as opposed to concrete substance of instruction; and two, the mediational rather than didactic means of instruction. Based on a sociocognitive view of learning (Vygotsky, 1978), students learn strategies and how and when to use them, through mediation. Because this view acknowledges individual differences between students, variation in response rather than one correct response is the norm. Feedback is suggestive, rather than corrective. The object of instruction is higher order, holistic strategies, rather than lower-order subskills. The abstract nature of strategies requires a high degree of explicitness in instruction to reduce the likelihood of student misrepresentation (Pressley, Harris, & Marks, 1992). Instructional techniques—or "effective instructional actions" (Pearson et al., 1992) include modelling, direct explanation and guided student practice. Instruction can take place with the whole class or within smaller social contexts—e.g., cooperative learning, peer tutoring, reciprocal teaching and discussion groups.

In sum, current comprehension theory is based on a reconceptualization of the reading process as demonstrated by expert readers. Strategic reading stresses the holistic use of high level thinking processes applied to multiple levels of text. Meaning is recursively constructed by the reader in a series of interactions with the text. Strategic reading is a developmental process beginning during emergent literacy and advancing with explicit instruction.

Similarities Between Traditional, Whole Language, and Strategic

Reading Perspectives of Reading Instruction

While this chapter has been devoted to differentiating traditional, whole language, and strategic perspectives of reading instruction, it is also important to consider their commonalities. These points of overlap can be viewed from teachers' goals, the reality of teachers as opposed to the abstraction of approaches, and evidence of common student achievement.

Based more on informal observation than research, few would argue against the existence of a core of goals constant across teachers from both code-emphasis and meaning-emphasis approaches to reading instruction. That is, all teachers of children in the lower elementary grades want their students to enjoy

reading, be able to comprehend not just decode text, and become independent readers. To those ends, some practices cut across particular reading programs. For example, exposing students to good quality children's literature is a universal practice among elementary teachers. As well, recent research indicates that all teachers of beginning reading insure that their students acquire the tools of comprehension, particularly phonics and word skills (Dahl & Freppon, 1995; Freppon, 1991).

Implied in the acknowledgement of common goals is the likelihood of different practices accomplishing the same ends. For example, whereas traditional teachers may use readers and workbooks to develop students' phonic skills, whole language teachers may use trade books, students' own writing, and phonics games. The relentless quest to identify relative effects of contrasting instructional approaches, at least when limited to basic outcome measures, have yielded minimal differences (Anderson et al., 1985; Dahl & Freppon, 1995; Froese, 1995; Willinsky, 1990) suggesting teachers' common ability to facilitate development of their students' basic literacy skills. However, other studies using alternative methodologies and/or measures of student literacy development have identified some differences in what students are learning in the contrasting programs. These differences seem to relate more to students' affective and higher-order conceptual views and literacy behaviors than their achievement of basic skills (Dahl & Freppon, 1995; Hagerty, Hiebert, & Owens, 1989; Morrow, 1992; Rasinski & deFord, 1988; Shapiro & Witte, 1990; Wing, 1991).

A second consideration in any analysis of instruction based on teachers rather than abstract descriptions of different approaches is that people are less definable than theory. There is ample research demonstrating that teachers are more accurately eclectic than theoretically pure (Lind, 1992; Pressley & Rankin, 1993; Walmsley & Adams, 1993). Indeed, the assumption that teachers can be neatly placed into one or another orientation is being challenged (McCargar, 1994). Instead, teachers' orientation to reading is coming to be viewed as a complex interplay among both skills-based and meaning-based dimensions so that the "*priorities . . . (of these) emphases, not their presence or absence, is what constitutes teachers' theoretical orientation*" (McCargar, 1994, p. 505).

Summary of Major Perspectives of Reading Instruction and Preview of Chapter III

Three major perspectives in reading instruction were discussed in this chapter: traditional, whole language, and strategic reading. These perspectives can describe teachers' personal practical knowledge of reading instruction. While instructional perspectives are most commonly classified as traditional and whole language, the addition of strategic reading reflects the most current literature.

The traditional perspective of reading instruction assumes a reductionist view of language, an additive view of learning to read, and a standardized view of the learner. Linear processing models of the reading process reinforce the task-analytic foundation of the reading curriculum. Readers progress up the ladder of reading skills attaining fluency first in decoding and eventually mastery of comprehension. Essential activities of instruction are monitoring and evaluating students' repeated practice to the end of skills mastery. Advances in learning theory and reading process theory have raised serious questions concerning the validity of traditional reading instruction.

Connected with Progressivism and progressive reading instruction, whole language was originally formulated from assumptions of psycholinguistic views of reading and child language development research. Whole language educators joined efforts in a two-fold mission: to protest erroneous assumptions of traditional reading instruction, and to redefine teaching reading, learning to read, and reading. Curricular implications from key research include emphasis on contextual aspects of reading, and immersion in meaningful, whole literacy events. Whole language instruction is characteristically supportive and facilitative, rather than didactic and corrective. The heated debates about reading instruction sparked by whole language has raised educators' awareness of the importance of theoretically defensible instruction.

Strategic reading emerged both as a response to the lack of comprehension instruction in basal programs and from applications of cognitive psychology to reading. Based on an interactive model of the reading process, a strategic reading curriculum replaces the traditional skills curriculum. Students learn high level tactics to use before, during, and after reading. Learning these strategies requires explicit instruction in the form of demonstration and modelling, followed by guided practice.

The two meaning-based perspectives have forced educators to make previously implicit assumptions explicit. While teachers' personal practical knowledge of reading instruction is more often reflective of several perspectives, the real concern is with what knowledge is theoretically defensible.

Finally, discussions of theoretical differences between different approaches to reading instruction can cloud their similarities. In elementary reading instruction, teachers can override theoretical boundaries so that common goals and common components of instruction, albeit variously emphasized, cast theoretical differences in a softer light.

The next chapter reviews the literature of the study of teaching. Special attention is given to discussion of the assumptions underlying the major research programs in the study of teaching since its inception in the beginning of the century. Within this framework major developments in the field of reading instruction are described. Particular attention is also given to current work in both teaching and reading instruction which is grounded in teacher cognition.

CHAPTER III: THE STUDY OF TEACHING

The purpose of this study is to identify factors of reading instruction, to describe groups of teachers based on these factors, and to examine other teacher and student variables of these groups. The study of teaching and instructional research in reading provide two frameworks for viewing teaching and the variables of reading instruction. The two fields overlap at several points historically and presently. Both teacher cognition, the current perspective in the study of teaching, and much current research in reading instruction, assume the vital role of teacher knowledge. Reviewing selected past research in these two fields uncovers assumptions which continue to color teacher education and curriculum and instruction in general, and matters related to reading instruction specifically.

This chapter reviews the characteristics and developments of the main stages in the field of the study of teaching: the early non-scientific period, the scientific study of teaching or process-product research, and the current era of teacher cognition. Within this framework I also review major events and developments in the reading field, in North America generally and in Canada and British Columbia particularly.

Early Period (late 1800's to 1940's)

The study of teaching traces its history to pressures of accountability in public schools at the turn of the century. Despite the prevalent assumption that good teachers were clearly those who were consistently punctual, organized, and cheerful (Rupley, Wise & Logan, 1986; Medley, 1979), school supervisors were required to formally rate all teachers. The criteria of these ratings reflected commonly held beliefs about natural teachers. The broad nature of the criteria, along with the absence of evaluation instruments, meant ratings were global and highly subjective.

During the 1930's, researchers advocated a more scientific approach to teacher study (Rupley et al., 1986). Major developments at this time concern the validity and reliability of supervisory ratings. The notion of teacher effectiveness was introduced with empirical tests of the relationship between highly-rated teachers and various student outcome measures. Interestingly, no significant relationships were found. The development of instruments such as checklists, rating scales and questionnaires attempted to standardize measures of teacher effectiveness (Gray, 1940; Olander, 1937). However, observations remained focused on teacher attitudes, characteristics, and personality, and their relationships to student attitudes and activities. Another problem lay in data collection procedures. Collecting data before and after, not during, instruction cast the classroom as a "black box" (Gage, 1963). Thus, despite developments in teacher research during this time, findings were regarded as being of little use:

The simple fact of the matter is that, after 40 years of research on teacher effectiveness during which a vast number of studies have been carried out, one can point to few outcomes that a superintendent of schools can safely employ in hiring a teacher or granting him tenure, that an agency can employ in certifying teachers, or that a teacher-education faculty can employ in planning or improving teacher-education programs (American Educational Research Association, 1953, p. 657).

Dunkin and Biddle (1974) cite at least four reasons this era of research was unproductive:

1. failure to observe teaching activities
2. theoretical impoverishment
3. use of inadequate criteria of effectiveness; and
4. lack of contextual effects (p. 13).

These areas of improvement would begin to be addressed during the next period of research.

In sum, the beginning era in the study of teaching was influenced by the general paradigm shift to scientism. During this time traditional beliefs about teaching as obvious and teachers as born began to conflict with emerging assumptions of scientism—i.e. that there are criteria to be discovered and teachers could be made. These assumptions would continue to direct classroom research until the 1970's and, consequently, the view of the teacher would move strongly in the direction of scientific practitioner.

Reading Research

The scientific approach was not limited to the study of teaching. Its influence pervaded reading research at this time as well to such an extent that the scientific movement has been deemed the "the most important educational trend that affected reading instruction research" (Venezky, 1984, p. 17). In reading, these years were coined the "Golden Era" (Smith, 1965). Huey's The Psychology of Reading, published in 1908, was the first scientific contribution to reading instruction. Gray's Student Oral Reading Paragraphs in 1915 pioneered the development of standardized measures of reading, in turn directing instructional research towards methods assessment. In the curriculum, real books were recommended, phonics was the dominant approach to beginning reading, and silent reading replaced oral reading. Overall, reading curricula reflected two approaches: skills sequence and the child-centered Activity Movement. In Canada, child-centered approaches were a familiar tradition dating from Ryerson's work in Ontario in the mid 1800's. Thus, in Canada, educational reform based on American Progressivism more than half a century later was readily adopted, notably in British Columbia. Finally, this was the time during which William S. Gray and Arthur Gates, leading reading researchers, began the flourishing business of authoring instructional materials.

Formalization Period (1950's to 1970's): The Rise and Fall of Process-Product Research

Whereas earlier teacher research assumed that certain personal characteristics were the basis of effective teaching, process-product research assumed that specific behaviors characterized effective teachers. Clearly influenced by the dominance of behaviorism in educational psychology, the teacher thought to be effective at this time provided appropriate stimulation in the form of verbal, attitudinal, and managerial behaviors; and students responded with demonstratable learning behaviors. Teachers could be trained to be effective by enacting lists of prescribed principles. Like teaching itself, the study of teaching was a scientific enterprise in which teachers' behaviors or characteristics could be isolated, identified, and manipulated as independent variables of student gains. In reading, availability of standardized measures of student outcomes became a tool of accountability, and prompted continuation of comparative studies of instruction on multiple scales.

Early Formalization: The Development of Classroom Observation Instruments

Heralded by the work of Medley & Metzler (1958) and Flanders (1960), direct observation of teachers' instructional behaviors became the cornerstone of the study of teaching during this time. These researchers developed instruments to observe teachers systematically during teaching. In contrast to using the questionnaires, interviews and self-reports of the past era, observers sat in classrooms with instruments composed of predetermined coding systems representing constructs of teacher behavior. Observers recorded the kinds and frequencies of behavior teachers used in actual classroom practices. Low inference measures—those which stayed close to the original behaviors—were favored over high inference measures of the past. Thus, "warmth" was replaced by such indices as smiles, positive touching and praise. The effectiveness of these behaviors was gauged by students' achievement and attitude scores.

As in the early periods of the study of teaching and reading research, the two fields once again had common ground between them. Just as those involved in the study of teaching collected data in real classrooms using objective instruments to record observations, reading researchers studied reading instruction in classrooms using instruments composed of a variety of specific behaviors associated with effective teaching of reading. Instruction which would improve students' reading achievement was being urgently sought due to increasing global competition, pressure for instructional accountability, and educators' concerns about the neglect of instruction in critical reading skills.

Two landmark studies in comparative reading were conducted during this time (Bond & Dykstra, 1967; Chall, 1967). Although their focus did not include higher level reading abilities, both research projects intended to resolve once and for all the "crisis of conflict" in reading instruction (Smith, 1965). While Chall's comparison of nine reading programs (representing 22 actual classrooms) pointed to the superiority of code-emphasis over meaning-emphasis approaches, the First Grade Studies' comparison of 27 beginning reading methods concluded that

no one approach is so distinctly better in all situations and respects than the others that it should be considered the one best method and the one to be used exclusively" (Bond & Dystra, 1967, p. 127).

Despite the move to classroom observations and the use of more objective instruments, the scientific study of teaching remained immature methodologically and theoretically. Much of the research became

entangled in the debate between progressivism and traditionalism, or in reading instruction, code-based and meaning-based. Studies comparing "open" and "traditional" programs were faulted for observer bias or "commitment" (Dunkin & Biddle, 1974). Rosenshine (1971) summarizes three main difficulties during this early era of process-product research: minimal differences between programs being compared; using the student instead of the class as the unit of analysis; and the use of ideologically-based, rather than classroom-based, observation systems. Once again, findings from the study of teaching were poorly received by the academic community . . . "most of the data amounts to superficial, rootless verbalisms . . ." (Cogan, 1963, p. 88).

Other research programs investigating learning also undermined early teacher effectiveness research. The Coleman Report (1966), for example, identified variables outside school as being more influential on student learning than any variables within school including teachers. Similarly a sharp increase of studies on curriculum effects of student learning during this time also directed attention away from teacher effects. In contrast, the First Grade Studies (Bond & Dykstra, 1967), inadvertently supported the influence of teachers in students' reading development by concluding "to improve reading instruction, it is necessary to train better teachers of reading rather than expect a panacea in the form of materials" (p. 123). Perhaps due to the inherent logic of instruction-learning relationships, researchers continued to investigate teaching variables of student outcomes and the field entered its most flourishing period.

Developed Formalization

Three developments during the 1970's mark this period of teacher effectiveness research. One, the field of the study of teaching was conceptually formalized largely through the work of Dunkin & Biddle (1974). Two, the structure of the research program evolved into the "descriptive-correlational-experimental loop" (Dunkin & Biddle, 1974; Rosenshine & Furst, 1973). And three, practical implications were received enthusiastically by policy-makers. Consequently, process-product research significantly influenced teaching and teacher training in the form of competency-based teaching. In reading, this was a period in which the pendulum swung sharply to the right or the conservative. Teacher-controlled, sequential skills curricula were reimplemented in response to the newly discovered "literacy crisis." Ironically, this is also the time in which cognitive, psycholinguistic, and sociolinguistic views emerged in the literature.

Dunkin and Biddle's (1974) landmark book, The Study of Teaching, influenced the field in at least two important ways: it openly established teaching as a social science, and presented a conceptual model for the study of teaching. Discarding any ideologies of teaching in favor of research-based knowledge, Dunkin & Biddle emphasized that

the activities of teaching are reasonable, natural, rational events . . . (which have) discoverable causes and effects . . . (and consist of) an observable, existential reality that is not divergent from any other set of observable events" (p. 12).

Dunkin & Biddle's model identifies three main types of variables in the study of teaching: independent variables, process variables, and product variables. They organize these variables chronologically—before, during, and after teaching. Independent variables consist of "prestage variables" (which consist of teacher formative experiences, teacher training experiences and teacher properties) and "context variables" (which are designated as pupil formative experiences and pupil properties; and school and community contexts and classroom contexts). Process variables consist of interactions in the classroom. Dependent variables are process variables which describe pupil classroom behavior and product variables (immediate student growth and long-term pupil effects).

Dunkin and Biddle propose that research be organized around six classes of knowledge about teaching. The most basic classes observe and formulate constructs of teaching, then study those constructs in classrooms. Higher classes of knowledge study relationships between constructs. The two most popular kinds of studies coming from this model sought correlations between process and product variables and tested the significance of process-product relationships with experimental treatments. The study of these classes of knowledge was to be organized in a "descriptive-correlational-experimental loop":

1. Development of procedures for describing teaching in a quantitative manner.
2. Correlational studies in which the descriptive variables are related to measures of student growth.
3. Experimental studies in which the significant variables obtained in the correlational studies are tested in more controlled situations (Rosenshine & Furst, 1973, p. 122).

The correlational studies gained the most attention from both researchers and educators in the field. These studies assumed that differences between teachers such as organization of instruction, methods,

materials, and teacher-pupil interactions would cause differences in their students' learning. Duffy (1981) describes the correlational studies in a review of teacher effectiveness research:

Process-product studies employ classroom observation tools which trained observers use when visiting a classroom to record how often a particular phenomenon noted on the observation form occurs in actual practices. The combined observations are analyzed, with the individual teacher as the unit of analysis, to determine the correlation between particular coded items and achievement growth as determined by standardized achievement tests and/or by less formal attitude measures (p. 116).

The initial correlational studies were fraught with limitations, both theoretically and methodologically. Dunkin and Biddle devote an entire chapter of The Study of Teaching to recommendations for improving the quality of teacher effectiveness research. Large scale correlational studies during the 1970's, backed by federal funding, attempted to correct many of these limitations. The organization and outcomes of these studies is discussed below.

The Role of the National Institute of Education

During the 1970's, the National Institute of Education in the United States contributed significantly to the development of the study of teaching as both a field of study and a reputable knowledge base. By convening the first national conference on the study of teaching in 1975 and establishing centers in universities for the study of teaching (e.g., Michigan State University Center for Teaching in 1976), the National Institute prompted authorization of the field.

Substantial funding from the National Institute of Education (NIE) permitted researchers to undertake large scale correlational studies (Berliner, 1975; Brophy & Everston, 1974; Soar & Soar, 1972; Stallings & Kaskowitz, 1974). Following on the heels of Head Start, the purpose of these studies was to identify effective means of educating children from low socioeconomic (SES) groups. The studies were conducted in the early grades, particularly grades one and three. Observations focused on basic math and reading skills for two main reasons: the "back to the basics" movement during this decade and the selection and availability of research instruments (observation and achievement tests) geared to these basic skills. Teacher behavioral foci included verbal behaviors such as praising and criticizing, questioning techniques,

pacing, grouping and instructional setting. The large data base and more scientific sampling procedures increased both reliability and validity of findings.

Conclusions from these studies gave new credence to the role of the teacher and demonstrated that "variations in teacher behavior were found to be systematically related to variations in student achievement" (Shulman, 1986a, p. 10). Specific findings related to effective teaching of low SES students supported highly structured whole class instruction and tasks kept at low levels of complexity, rather than small group or independent work incorporating higher level thinking.

These studies seemed to finally offer specific, scientifically-based implications for teaching. However, across studies relationships were rarely consistent and even contradictory (Dunkin & Biddle, 1974). It was recommended that

most findings from this field must presently be presumed tentative: because we are not sure how strong they are, because we do not know whether they are independent of other effects, or because they have not yet been validated experimentally (Dunkin & Biddle, 1974, p. 359).

Other concerns about both conducting and interpreting process-product research later discussed by Hoffman (1986) include the need for theoretically congruent process-product variables, multiple rather than single outcome variables, and inclusion of curricular goals other than basic skills. Finally, researchers share concern that findings from correlational studies are too often misinterpreted as causal relationships. Such concerns are easier to express in retrospect than in the din of "back to basics" calls heard across North America, including Canada and British Columbia.

A Need for Meta-analysis

As mentioned above, findings from large-scale correlational studies were limited to settings (experimental programs) and populations (low SES) in which they were conducted. Meta-analysis and reviews of these studies attempted to advance findings about individual teacher behaviors to general principles (Brophey, 1979; Good, 1979; Medley, 1979; Rosenshine, 1979). Principles of effective teaching derived from this research included direct instruction, active teaching, management strategies (including time on task), and positive teacher expectations.

There are three general concerns about principles derived from reviews and meta-analyses of correlational studies. One relates to their artificiality, another to the quality and number of the studies they represent, and another to historical validity. First, the problem that these principles are synthetic patterns rather than real behaviors found in any one teacher is inherent in the nature of meta-analysis. Shulman (1986a) explains that

the bulk of process-product research, while based on naturally occurring correlations, defined effective teaching through an act of synthesis by the investigator or reviewer, in which the individual behaviors associated with desirable pupil performance were aggregated into a new composite. There was little evidence that any observed teacher had ever performed in the classroom congruent with the collective pattern of the composite (p. 12).

Second, Hoffman (1986) points out that the reviews of process-product research outnumber the studies, and in fact, the findings from meta-analysis represent a relatively small number of studies. This is so because individual studies looked at many variables and consequently found many correlations. Findings from reviews and meta-analyses are limited by the theoretical and methodological weaknesses of the individual studies. Finally, Cuban (1984) concluded from his historical study of teaching that teacher-centered instructional practices have been both dominant and constant since (at least) the turn of the century. Principles derived from teacher effectiveness research simply affirm the kinds of practices constrained by school and classroom organizational structures as well as the conservative culture of teaching (p. 254).

Programmatic Research

Programmatic research is the next and final stage in the process-product research program. It is explicitly described by Brophy (1979) as

research that tests hypotheses derived from correlational work, identifies causal relationships, and builds upon these in developing teacher education approaches is needed if teaching is to become the applied science that it can and should be (p. 1).

Faith in the scientific conception of teaching (Dunkin & Biddle, 1974) opened the door to the next stage of process-product research—experimental studies. Programmatic research was to be the pinnacle of the process-product paradigm where experiments were regarded as both the "ultimate means of validating

the effectiveness of teaching strategies and . . . irreplaceable in the armory of the researcher concerned with teaching and its effects" (Dunkin & Biddle, 1974, p. 446). In contrast to the large-scale correlational studies, programmatic research took place in natural classrooms rather than in laboratories or artificially-controlled classrooms.

With the principles of effective teaching now identified and formulated, researchers could re-analyze the observational studies to determine the teaching skills which would embody these principles. In other words, the next step in the research program was to test the skills in programs designed to promote those effects. This research program assumed teachers could learn the skills of effective instruction and practice them with their students, and results would then be born out in their students' achievement scores.

Several large scale projects developed treatment programs based on findings from process-product research. Again, curricular content was directed to basic math and reading skills during the early years of school. Process variables consisted of skills involved in behavior management, questioning and feedback strategies, and direct instructional methods (Anderson, Everston & Brophy, 1975; Good, 1979). In an extensive review of programmatic research directed to reading, Rosenshine and Stevens (1984) conclude that:

- (1) Students who receive much of their instruction from the teacher do better than those expected to learn on their own or from each other and
- (2) Students learn to read most efficiently when teachers use systematic instruction, monitor student responses, and give students feedback about their performance (p. 746).

Two other related variables of effective reading instruction as determined by high achievement test scores include coverage of basal program (Barr & Dreeben, 1983) and time on task for reading (Edmond, 1975, 1979).

The results of these studies, along with the correlational studies which preceded them, support a structured curriculum over individualized or discovery learning approaches; explicit, direct instruction (demonstration-practice-feedback) over individual or group learning; and over-learning to the point of automaticity for both hierarchically-organized material and higher cognitive processing (Rosenshine, 1983, p. 336-337). In sum, these studies successfully carried out their purpose "to reinforce the findings of the earlier correlational studies, and to determine if treatment interventions are effective in changing teacher

behaviors" (Rupley, Wise, & Logan, 1986). In reading, scope and sequence curricula, teacher-directed learning, and behaviorist pedagogy was enforced by this research and once again, dashed hopes for any promise of child-centered, purposeful instruction (Shannon, 1989).

Shulman (1986a) discusses several reasons why process-product research flourished at this time. One was its consistency both with the dominant research tradition—applied psychology and its task-analytic training tradition—and the current metaphor of teaching as "a bundle of skills" legitimated as a science (p. 11). Another was embedded in the norms of the competency-based teacher education movement. Shulman refers to this aspect as the "dual advantage of ready association with observable results for pupils and the appearance of clear implications for evaluation, training and policy" (p. 11). Finally, Shulman states, the process-product research program was popular because

. . . the approach worked. The studies conducted under its programmatic direction accomplished the sorts of important aims outlined for them. Teachers who consistently were associated with higher achievement gains tended to behave differently from those who were not . . . Teachers seemed capable of learning to perform in the manners suggested by the research program and the performances tended to produce higher achievement among their pupils. Within the limits of whatever activities standardized achievement tests were measuring, the program was palpably successful. (p.11).

Perhaps above all else the process-product research program resonated with deeply-held assumptions about teaching and learning—i.e., those implicit in a Cartesian world view (Crowell, 1986). As Shulman (1986a) explains, "the program produced scientific support for approaches to instruction with which the majority of teachers, administrators and parents felt intuitively and professionally comfortable" (Shulman, 1986a, p. 11). For all the above reasons, competency-based teacher education took root, thus attributing to process-product research the foundation of many teachers' commonsensical knowledge about effective teaching.

Transformative Period: (1980-present)

During the next decade, developments in learning theory and research methods began to conflict with assumptions of behaviorism and scientism. Encompassed by a cross-discipline paradigm shift towards holism (Crowell, 1986; Weaver, 1994), educational research including the study of teaching headed in new directions. Thus process-product research as a paradigm for studying teaching began its descent

concurrently with the demise of behaviorism as a means of understanding learning and empiricism as the sole method of research. Dunkin & Biddle's noble cause of establishing teaching as a science had crossed the line into engineering while it sought "causes . . . in behaviors, not in theoretically meaningful mechanisms or explanations" (Shulman, 1986a, p. 13). In contrast to behaviorism, theories and explanations from cognitive psychology, sociology, and cultural anthropology provided a more meaningful framework to understand teaching and learning. Both teaching and learning were coming to be understood as highly complex processes, processes which behaviorism was inadequate to explain. Alternative methods of interpretative inquiry from the social sciences facilitated deeper understandings of these complex processes.

Three major research programs in the study of teaching have evolved since the mid 1970's: student mediation, classroom ecology, and teacher cognition. The first two programs, although certainly important to the study of teaching, are less relevant to this particular investigation than the third. I will therefore explain only briefly the significant contributions made by pupil mediation and classroom ecology research before focusing on teacher cognition.

The main contribution to the study of teaching made by these two programs is replacement of the behaviorist perspective of process-product research with perspectives from cognitive psychology, sociology, and cultural anthropology. Studies based on these perspectives (and their derivatives) expanded and enriched the field. Theoretical assumptions of these studies included 1) the validity of interactions between persons and their environment and reciprocal interactions between student and teacher as means of constructing reality, 2) teaching and learning as continuously interactive processes, 3) the classroom as nested in other contexts and 4) the importance of tacit processes (Hamilton, 1983). Thus the focus included not only teacher behavior but also student processes and the personal meanings of all the participants. Similarly, standardized student outcome measures were replaced with mediators of learning, clarity of communication, and equality of opportunity as ends of analysis. Landmark studies from these programs include Doyle (1983) in pupil mediation of learning; and Eriksen (1982), Cazden (1983), McDermott, (1977), Mehan (1979) and Florio (1978) in classroom ecology.

Teacher Cognition

During this time, there was a general shift in educational research to thought processes—of the reader in reading research, and of the teacher in the study of teaching. Teacher cognition research represents a radical shift from the measurement and manipulation of variables (Gage, 1963) to studies of teachers' thoughts. Supported by the transition in psychology theory to thought-action relationships (Nesbitt & Ross, 1980; Newell & Simon, 1956, 1972), leaders in the study of teaching pointed the field in new directions. Jackson's (1968) pioneering case study, Life in the Classroom, set out to reveal the "hidden" side of teaching. Shulman's (1975) position statement on the future of the field emphasized the need for pursuing a cognitive perspective:

It is obvious that what teachers do is directed in no small measure by what they think. Moreover, it will be necessary for any innovations in the context, practices and technology of teaching to be mediated through the minds and motives of teachers. To the extent that observed or intended teacher behavior is "thoughtless" it makes no use of the human teacher's most unique attributes. In so doing, it becomes mechanical and might well be done by a machine. If however, teaching is done . . . by human teachers, the question of the relationships between thought and action becomes crucial (NIE, 1975, p. 1).

There are two main research programs in teacher cognition: the earlier focus on teachers' thought processes (Clark & Peterson, 1986; Stern, 1976; Stern & Shavelson, 1981) and the current focus on teacher knowledge (Elbaz, 1983; Leinhardt, 1988; Shulman, 1986b, 1987). The earlier program is based largely on information-processing theory and focuses on thought processes before, during, and after teaching. Referred to as teacher decision-making, this research studies teachers' thoughts influencing such instructional decisions as grouping, time management, content coverage etc. In contrast, the current program of teacher knowledge is based on more recent developments in cognitive psychology and concentrates on teachers' specific subject matter knowledge.

The remainder of this chapter is organized in two main sections, each dealing with one of the research programs in teacher cognition. The first section reviews aspects of teacher decision-making and the second section reviews aspects of teacher knowledge. The review of teacher decision-making research is limited to foundational work in teachers' theories, their relationship to instruction, and current studies in teachers' theoretical orientations. The review of teacher knowledge is limited to an introduction of the theoretical premises and a discussion of one of the main outgrowths of teacher knowledge, that of teacher

change. Specifically, the discussion of teacher change will focus on studies in which reading instruction is the context of teacher change.

Teacher Decision-Making

Stern and Shavelson (1981) identify two assumptions guiding this approach to the study of teaching: One, "teachers are rational professionals, who, like other professionals such as physicians, make judgements and carry out decisions in an uncertain, complex environment" and two, "teachers' behavior is guided by their thoughts, judgements, and decisions" (p. 456-457). Teachers in this model were viewed as

active agents with many instructional techniques at their disposal to help students reach some goal. In order to choose from this repertoire, teachers must integrate a large amount of information about students from a variety of sources. Teachers must somehow relate this information to their own beliefs and goals, the nature of the instructional task, the constraints of the situation, and so on, in order to reach a judgement (Shavelson, 1983, p. 396-397).

Thus teacher cognition transformed the teacher from technician to professional as well as focused on their thought processes. Early work in teacher cognition (reviewed in Clark and Yinger, 1977; Shavelson and Stern, 1981) included studies in teachers' planning, teachers' judgement, teachers' interactive decision-making, and teachers' implicit theories.

Although few studies in teachers' implicit theories and beliefs were conducted during this time, researchers began to emphasize their influence on teachers' actions and the need for more studies (Clark & Yinger, 1977). A decade later the need had only become more acute.

. . . inquiry into this topic is central to a complete and useful understanding of thought processes in teaching. While we may learn much that is interesting and useful from a technical point of view from research on teaching planning, interactive thinking, and teachers' attributions, we can make sense of these findings only in relation to the psychological context in which the teacher plans and decides (Clark and Peterson, 1986, p. 285).

Although most work in this area was aimed at teachers' implicit theories about teaching and learning in general, some research about reading in particular was conducted. The first studies in this area attempted to identify teachers' theories of reading. Based on the argument that instruction is theoretically-

based (Harste & Burke, 1977; Kamil & Peterson, 1979), measures of teachers' implicit theories of reading were developed. Later these measures were used to investigate theory-practice relationships.

Each of the three major instruments developed during the 1970's premises the influence of teachers' theories. Harste and Burke (1977) defined theoretical orientation as "a cognitive structure or generalized schemata which governs behavior" (p. 32). Duffy and Anderson (1984) assumed that "teachers organize instruction according to a conceptual frame or cognitive structure which drives them to select certain instructional alternatives over others" (p. 97). DeFord (1985) claimed that "knowledge forms a system of beliefs and attitudes which direct predictions and behavior" (p. 352-353).

Measures of teachers' tacit knowledge about reading focused on one of three aspects of reading: process, development, or instruction. (These aspects continue to be standard types of measures used today.) Measures of the reading process are usually classified along a continuum of text-based, reader-based, and interactive models. Teachers' theoretical orientations to reading development are commonly based on a scale ranging from decoding to skills to whole language (or language-based) (Harste & Burke, 1977). Teachers' theoretical orientations to reading instruction are categorized according to familiar instructional approaches. The Theoretical Orientation to Reading Profile (TORP) (deFord, 1978, 1985) and the Propositions about Reading Instructional Inventory (PRI) (Duffy & Metheny, 1979) are well known examples of these instruments. TORP requires teachers to respond to propositional statements on a Likert-type scale. Teachers' orientations are then placed along a continuum from isolation to language integration. The Propositions about Reading Instructional Inventory (PRI) characterizes teachers' orientations according to five models of instruction: basal, linear skills, natural language, interest-based, and integrated curriculum. These divisions cluster as either content-centered approaches (in the first three models) or student-centered approaches (in the last two models). Both PRI and TORP were developed and tested with teachers in laboratory conditions. Under these conditions, teachers appeared to hold distinct and identifiable orientations to reading instruction. However, a recent re-analysis of the TORP (McCargar, 1994) found that "theoretical orientation to reading is not a unidimensional construct. Rather an orientation seems to represent the priorities that a teacher gives to (many) factors" (p. 504).

Logically following from the development of implicit theory measures were studies testing their predictability in teachers' classroom practices. While some studies concluded that the influence of teachers'

implicit theories of reading on their classroom practices was consistent and primary, others concluded that it was inconsistent and secondary. Later studies continued to explore the nature and strength of the relationship between implicit theories and practice. Assumptions and findings from three types of studies are described below.

A Consistent and Strong Relationship

As mentioned above, Harste and Burke (1977) argued strongly in favor of the theoretical basis of teaching reading. Indeed, they contended that "looking at reading instruction in terms of theoretical orientation is a more cogent, insightful, and accurate one than looking at reading instruction in terms of reading approaches" (p. 40). That is, a teacher may follow a new program or try new activities, but his/her theoretical orientation, if it is not aligned with that of the new program or activities, will continue to produce unaltered conceptions of literacy in his/her students. One of the most significant contributions of their study is the extension of the theory-practice relationship into the minds of the students. Their findings about the match between teachers' conceptions of reading and their students' conceptions suggest that teachers' schemata drive both instruction and their students' schemata about reading. Exploring the positive relationships between teachers' and their students' conceptions of literacy has continued to be a focus of current research (Rasinski & deFord, 1988; Shapiro & Witte, 1990; Wing, 1991).

A few years later deFord (1985) tested the validity of her instrument by observing teachers during reading instruction. She concluded that teachers' theoretical orientation, as measured by the TORP, is a valid indicator of decisions teachers make while teaching. In other words her study affirms the strength of the theory-practice relationship. Recently, Johnson (1992) compared theoretical orientations of methodology and classroom literacy instruction of ESL teachers and also found a consistent relationship. Thus, some studies show that teachers hold well-defined conceptions of reading development and that these views are consistent with their instructional practices.

An Inconsistent and Secondary Relationship

In contrast to the above studies, others found only weak relationships between teachers' theoretical orientations and their classroom practices (Buik, Burke & Duffy, 1979; Duffy & Anderson, 1984;

Hoffman & Kugle, 1982). Duffy (1977) conducted a large scale study of theory-practice relationships in reading instruction. From the 350 elementary teachers who completed the PRI, only 37 were rated as having clear and strong theoretical orientations to reading. Classroom observations of eight of these teachers found that four teachers directly reflected their particular theoretical orientation. These findings indicate that theory-practice relationships exist only when beliefs are strongly and clearly held.

Follow-up studies reveal a large number of factors other than beliefs which shape teachers' instructional decisions. By 1986, most researchers agreed that "classroom teachers can articulate theories of reading outside the classroom, but . . . their actual and instructional practice is governed by a complex set of contextual factors" (Duffy & Anderson, 1984, p. 97). Duffy and others who share this view group these factors in several ways. For example, one system describes two types of context variables: outside variables (such as mandated programs and standardized tests) and classroom variables (such as subject matter, grade level and individual student ability levels) (Duffy, 1991). A similar system regards internal and external variables (Anders, 1992). Another system groups variables as educational beliefs besides those of reading, the teaching context, and program or basal materials used (Duffy & Roehler, 1986). While some researchers argue that conceptions of reading underlying basal programs have shaped teachers' understanding about reading (Goodman et al., 1987), others found that teachers do not necessarily rigidly follow basal programs (Barr & Sadow, 1989; Borko, Shavelson & Stern, 1981; Durkin, 1984). Still others argue that instruction is constrained by assessment and evaluation criteria (Cambourne & Turbill, 1991), resulting in teaching as an accountability-driven rather than instructional activity (Durkin, 1979-80). As teacher knowledge became a central tenet of literacy instruction, the identity and role of contextual variables became a growing focus of research. These studies will be discussed later in the section on teacher change.

In sum, studies which cast doubt on a direct theory-action relationship suggest that "teachers' beliefs are situational and transferred to practice only in relation to the complexities (inside and outside) the classroom" (Hoffman & Kugle, 1982, p. 7).

Current Studies in Teachers' Theoretical Orientations to Reading

Supported by the general trend in the study of teaching towards understanding teachers' theories, reading research continued to investigate aspects of teachers' theories about reading. The group of studies pursuing this perspective does not neatly correspond to one of the two perspectives of teacher cognition (i.e., decision-making and teacher knowledge). Although early studies concerned with the development and testing of research instruments of implicit theories emerged from the decision-making model of teacher research, later studies relate more to the perspective of teacher knowledge. Some of these transitional studies are reviewed below.

One focus of study in this group is the relationship between the different types of beliefs about reading and the particular influence of these separate belief systems on instructional decisions. Richardson and al. (1991) found a consistent relationship between beliefs about the reading process and learning to read amongst 39 elementary school teachers. In another study, beliefs about reading instruction (content-centered or student-centered) correlated significantly with goals and objectives teachers set for their beginning reading instruction (Rupley & Logan, 1985). Kinzer & Carrick (1986) compared teachers' beliefs about the reading process and reading development. They found that teachers' beliefs about reading development had a stronger influence on instructional decisions than their beliefs about the reading process. Furthermore, teachers who held reader-based beliefs made decisions consistent with these beliefs about higher order skills (vocabulary and comprehension) and inconsistent decisions when instructing lower order skills (phonics and word attack). It appears teachers' inconsistencies between beliefs and action can at least be partly explained as differential use. It seems that all teachers of beginning reading stress phonics and word skills regardless of their theoretical orientation (Freppon, 1991).

Inconsistencies between teachers' theories and their practices continues to be a focus of research. One explanation relates to subject-specific theories. Studies concerned with language across the curriculum find that teachers hold more traditional beliefs about reading in the subject areas than they do in the language arts curriculum (e.g., Konopak et al., 1990). In the Richardson et al. (1991) study, one teacher's belief that students were supposed to read social studies texts to retain information and answer objective questions conflicted with her student-centered instruction in reading. Other studies support this explanation. For example, Konopak et al. (1990) found that although teachers valued reading for

comprehension, reading for content instruction was a skills-based, textbook and worksheet activity, a phenomenon they attribute to teachers' beliefs about academic subjects.

Another explanation of apparent contradictions between teachers' theories and their practices relates to the conflict between public and private beliefs. One teacher in the Richardson et. al (1991) study held student-centered beliefs but was observed systematically following a basal program. When questioned she explained she was trying to get through the required program quickly in order to include a six week literature study program at the end of the year. Similarly, Levande (1989) observed that teachers who reported to be phonics-oriented were using a skills-based basal program in their classroom. Further questioning revealed that those teachers were in nontenured positions and felt obliged to use the mandated program. Mitchell et al. (1991) studied four teachers who all held reader-based views of the reading process and yet were clearly engaged in different instructional programs. Their findings lead them to conclude that those differences

were the result of varying social, psychological and environmental realities of the participants' respective schools that either created an opportunity for or constrained them from implementing their reader-based beliefs in their decision-making (p. 383).

Additionally, both Kinzer (1988) and Thomas et al. (1988) found that teachers' experience affects the nature of the relationship between theoretical orientation and practices. Whereas preservice teachers made decisions consistent with their theoretical orientations, inservice teachers made more inconsistent decisions. Implications of these findings support the complexity of teaching.

Other studies began to uncover the roots of teachers' personal practical knowledge about reading and differences between that knowledge and research-based theory. The roots of teachers' personal practical knowledge seem to be of three types—past personal experience as a reader or learner (Goodlad, 1990; Richardson & Hamilton, 1988), classroom experience in teaching reading (Levande, 1990), and formal professional development (Levande, 1990). The first two sources are the most influential on actual practice and the third, much to the despair of teacher educators, appears to be the least influential (Goodlad, 1990; Hollings, Reutzel, Ray, & Weeks, 1990). Goodlad's comprehensive inquiry (1990) into the perpetuation of poor teaching—at least poor in regards to the schools' failure to develop higher level abilities in students (evidence of this failure pertaining to literacy are reported in the most recent NAEP literacy

studies)—uncovered a complex network of structural and attitudinal factors. While there are major everyday obstacles to implementing the kind of thoughtful teaching and effective practices discussed in the literature, the fact remains that "what future teachers experience in schools and classrooms during their years as students profoundly shapes their later beliefs and practices" (Goodlad, 1990, p. xiii).

It appears then that the roots of teachers' knowledge of reading instruction are less controlled by what should or could be, than by happenstance exposure to various models. The mixed basis of teachers' personal practical knowledge about reading along with the situational nature of teaching help explain why few teachers enact a pure theory of reading development and instruction. It is more common for teachers to follow broad, multidimensional, and eclectic orientations.

In summary then, teacher decision-making research concerning teachers' beliefs and implicit theories in reading instruction has provided instruments to ascertain and define those beliefs and implicit theories, raised a controversy over their assumed influence in instructional decision-making, described some contextual constraints and opportunities which mediate theory-practice links, explored relationships between types of teacher-held reading theories and their varying influences on instruction, and examined the multiple foundations and dimensions of teachers' personal practical knowledge about reading.

Teacher Knowledge

The introduction of the teacher knowledge research program was inspired by the neglect in previous research of teachers' conscious possession and use of higher order thinking about subjects in which they were experts (Fernstermacher, 1986; Shulman, 1987). The movement was also supported by an emerging perspective in the philosophy of teaching attending to the mind of the teacher, particularly teachers' higher-level reflective thinking (Shoen, 1982). The major advance made in teacher cognition has been the shift in attention from teachers' implicit theories and beliefs to teachers' knowledge. Researchers distinguish implicit theories and knowledge in terms of their respective sources: implicit theories and beliefs are affectively and experientially derived; knowledge is intellectually-derived (Nespor, 1987). Their relative influence on teaching is also examined. While educational psychologists continue to debate this issue (Nespor, 1987; Pajares, 1992), the current teacher cognition paradigm supports the more influential role of knowledge.

Whether knowledge or beliefs are more influential in teaching relates to different assumptions about teaching. Past views of teaching as "ill-defined problems and entangled domains" (Nespor, 1987, p. 324) portray teaching as being determined by one's beliefs and automatic responses. In contrast, current views of teaching stress the use of organized, complex knowledge and higher level cognitive processes in multiple and diverse contexts (Cochran, DeRuiter & King, 1993; Roehler & Duffy, 1987; Shulman, 1986b). Put simply, knowledge-based actions are congruent with the professionalization of teachers, and teacher research attempts to elucidate that knowledge: "Practitioners simply know a great deal that they have never tried to articulate" (Shulman, 1987, p.12).

There are several theories of teacher knowledge in the literature (Elbaz, 1983; Leinhardt 1988; Shulman, 1986, 1987). Shulman's theoretical model is the most widely known and has become the basis of many studies (e.g., Grossman, 1991; Marks, 1990), and the foundation of leading teacher education programs (Stanford University; Cochran et al., 1993). Shulman distinguishes four areas of teacher knowledge: subject matter knowledge, general pedagogical knowledge, pedagogical content knowledge, and knowledge of context.

Process-product research along with most research in teacher thought processes focused on general pedagogical knowledge. In his review of the study of teaching (1986a), Shulman addresses the lack of attention to subject matter knowledge and proposes a new type of teacher knowledge integrating pedagogical and subject matter knowledge:

Pedagogical content knowledge embodies the aspects of content most germane to its teachability. Within the category of pedagogical content knowledge I include, for the most regularly taught topics in one's subject area, the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations—in a word, the ways of representing and formulating the subject that make it comprehensible to others . . . (It) also includes an understanding of what makes the learning of specific concepts easy or difficult; the conceptions and preconceptions that students of different ages and backgrounds bring with them to learning (Shulman, 1986b, p. 9).

As in other eras of the study of teaching, interrelationships between that field and reading instruction research were apparent. Concurrent with the inception of the research program based on teacher knowledge, whole language was becoming a controversial instructional approach in the field of reading education. Whole language premises teachers' understandings about language development and language

instruction rather than prescribing specific practices (Altwerger et al., 1987; Newman & Church, 1990). Historically, both teachers' knowledge and teachers' implicit theories have been considered distinct from research knowledge (Richardson, 1990). The whole language paradigm assumes congruence:

Whole language represents a coming of age of educational practice, a new era in which practitioners are informed professionals acting on the basis of an integrated and articulated theory that is consistent with the best scientific research and the theories in which it is grounded (Goodman, 1992, p. 47).

Teacher Knowledge and Teacher Change

Whereas teacher beliefs were studied in relationship to student outcome variables in process-product research, current research in the study of teaching focuses on teacher knowledge in relationship to teacher development and their classroom practices. This section reviews some the key principles from this research, specifically the centrality of beliefs in teacher change, the nature of the change process, and some variables which promote or impede change.

The centrality of beliefs. Many of the studies related to teachers' knowledge of reading and reading instruction in this paradigm concern teacher change. As whole language developed both at the grass-roots and at the policy level in North America (the progressive tendencies of Canada and British Columbia perhaps explaining how our educational systems became leading examples of these phenomena), a group of studies investigating teachers' theoretical and practical knowledge of reading evolved. In terms of instructional change reflective of current research, this research is premised on the notion that

Change in teaching comes about not through individual research findings but through changes in the world views of teachers and learners . . . we need to study teachers' and learners' theories and models of language learning *before* we intervene with new teaching strategies" (Wittrock, 1985, p. 377).

Fullan's (1982, 1993) work on teacher change also confers primacy to teachers' beliefs, or knowledge. Fullan (1982) identifies three main aspects of change: materials, methods or strategies, and beliefs. Change based only on content or materials results in a perceived state of "false clarity" (p. 58). Other studies have demonstrated the limitations of changes in materials only, as their use is variously

shaped by the teacher's philosophy (Zarrillo, 1989). There is consensus that change involves more than materials or superficial addition of activities. Instead, change requires a "complex renegotiation of cultural norms and patterns" (Altwerger & Flores, 1989, pp. 288-289), or more simply, a paradigm shift (Meyer, 1988):

When we ask or demand that teachers change how they teach, particularly when new techniques are different ideologically and behaviorally from those learned and accepted in college, we are asking for what Kuhn (1970) called a paradigm shift (p. 56).

Under these conditions, prospects for change appear discouraging. Researchers argue that teachers' beliefs about teaching and learning remain those of transmission and absorption (Langer, 1984; 1991; Prawat, 1992). Additionally, conclusions from teacher decision-making research dampen the likelihood of teachers' revisions of assumptions about language learning and instruction. In her review of instructional research in reading, Barr (1986) concluded that teachers' decisions about reading instruction tended to be low level and pragmatic, rather than high level and reflective. In her recent presidential address to the National Reading Conference, Barr (1994) pointed to American teachers' continued dependence on text programs. Both Barr (1986) and Goodlad (1990) argue that the short terms of teacher training programs in North America are a main cause of teachers' tendency to operational rather than reflective activity. Similarly, Duffy and Roehler (1986) concluded "Getting teachers to change is difficult. They particularly resist complex, conceptual, longitudinal changes as opposed to change in management routines or temporary change" (p. 55). Despite this gloomy forecast, research in teacher change is a fast-growing pursuit. Case studies and surveys are two main methods literacy educators use to describe how and to what extent teachers are responding to both incentives and directives for change.

Case studies examine the multiple and complex variables of change. Most of these case studies focus on the individual teacher (Bruneau, 1992; Button, 1992; Courtland, Welsh & Kennedy, 1987; Mangano & Allen, 1986; Moss, 1990; Pace, 1992; Scharer & Detwiler, 1992; Siera & Combs, 1990). A few focus on a school district (Clark, 1987; Freeman et al., 1993; Gambrell & Newton, 1989). The change can derive from several sources: it may be mandated by authority; recommended by authority and supported by professional development, or initiated by the individual and developed through a combination of experience, coursework, professional development, and peer collaboration.

Nature of the change process. Two kinds of changes teachers make in their practices while implementing whole language approaches to reading instruction relate to curricular materials and activity sequences. Teachers often first attend to the concrete by replacing basals with literature, or more commonly, adding literature to the reading program. They also tend to add new learning activities to old structures (Lipa & Harlin, 1993; Moss, 1981, 1990; Ray, Lee & Stansell, 1992; Richardson et al., 1991) such as adding response journals or students' own writing to a reading program mainly controlled by a basal program. Consequently, this stage of transition is marked by contradictions which may appear unnoticed by teachers (Siera & Combs, 1990). A less common change relates to task structure, or teacher and student roles. The shift from teacher-centered instruction to student-centered learning appears to be particularly difficult for teachers (Moss, 1981). However, teachers implementing whole language tend to allow more collaborative student work and less teacher-directed instruction. Overall patterns of teacher change have been described as global rather than detailed and linear and recursive (Courtland, 1992). That is, change is more apparent than conceptual and marked by steady advance then retreat to familiar ways.

One possible cause of the above types of changes is the "bandwagon phenomenon" (Shanklin & Roser, 1989). Observations of classrooms in districts supportive of whole language suggest that in the zeal or pressure to implement new ideas, teachers adapt the presence but not the theory of the practice, resulting in misimplentation (Halpern & Craddock, 1992; Hoffman, Roser & Battle, 1993; Shanklin & Rhodes, 1989). Maguire (1989) groups teachers who have been supported to implement provincial-wide whole language instruction as reflective teachers (successful integration of theory and practice), eclectic teachers (partial implementation), and uncategorized and unreflective teachers (no implementation) (p. 152).

Some large scale surveys assess the correspondence between policy and practice. Collectively, these studies conclude that instruction is multidimensional. For example, teachers in West Virginia were found to follow such research-based practices as setting purposes for reading, activating prior knowledge, and silent reading. However, they also rely on basal programs (with some supplementary literature) and use workbooks and ditto sheets after reading (O'Flavahan & McDonnell, 1990). Another implementation study (Hosking, 1991) surveyed teachers' instructional arrangements, teaching practices, and use of materials in order to assess the implementation of Saskatchewan's new language arts curriculum in grade one. Although

teachers were enthusiastic and confident about implementing the new curriculum, not all teachers were theoretically aligned with language-based reading.

Recent surveys of language arts instruction in British Columbia document how instruction is changing from skills-based to more meaning-based approaches, as well as teachers' propensity for eclecticism. The 1988 Provincial Reading and Written Expression Assessment found the majority of grade four teachers use "modern" methods, such as language integration, small group discussions, and independent projects. Similarly, Scott & Butler (1994) found that whether grade four teachers identified their language arts programs as traditional or whole language, the programs shared more commonalities than differences. Most teachers used the writing process, taught reading comprehension strategies, and used cooperative grouping. Finally, 55% of grade three teachers in British Columbia reported subscribing to a combination of approaches, and 23% to a whole language or literature-based approach on the 1991 IEA teacher questionnaire.

Some variables of teacher change. Teacher change studies have impressed upon educators that change is a complex process involving both teacher and contextual factors (Freeman et al., 1993; Moss, 1990; Richardson, 1990; Richardson et al., 1991). Some of these barriers to change in Canadian classrooms have been recently summarized:

Some teachers lack the philosophical orientation as well as the in-service support required to implement a whole language program . . . some teachers are reluctant to give up these familiar activities (worksheets, whole class direct instruction) for others involving more student-centered approaches as they lack appropriate replacement material—especially large stocks of quality literature (Maclean, Gordon, Hopper & Miller, 1993, p. 67).

The role of teacher beliefs or theories has already been discussed and other variables already mentioned. The remainder of this section notes additional points related to students, teacher experience, and teaching context as variables of teacher change.

Both class and individual student profiles have been found to affect teachers' assumptions about the most effective instructional approaches. While mainstream children come to school more prepared for formal literacy instruction (Heath, 1983; Wells, 1986), children from other cultural or linguistic groups and children who find learning to read difficult are more likely to be taught with traditional methods

(Allington, 1983; Nesper, 1991). Descriptions of meaning-centered instructional practice for such children are only currently being introduced to teachers.

Amount of teaching experience has been found to be a factor in successful implementation of strategy instruction (Gaskins, Anderson, Pressley, & Cunicelli, 1993) "due to the complexity of orchestration involved—of content, procedures and behavior, as well as process instruction" (p. 301).

While the above are representative of internal factors, other studies have identified several external factors influencing teacher change. These include accountability to administration and parents (Freeman et al., 1993; Scharer & Detwiler, 1992), class size (Duffy & Roehler, 1986), staff support (Freeman et al., 1993; Moss, 1990), and student response (Moss, 1990).

Conclusions from teacher change research affirm the slow, evolutionary nature of change for individual teachers moving from traditional to meaning-based literacy instruction because of the difficulty of transforming knowledge not just altering practices (Duffy, 1991; Hiebert & Colt, 1989; Siera & Combs, 1990). In Canada and British Columbia our child-centered educational legacy has perhaps allowed a more ready embrace of current meaning-emphasis perspectives of reading instruction, both by teachers and by ministries of education.

Another factor of change is the manner of change. Teachers who are mandated to change are unlikely to restructure beliefs and knowledge in contrast to other means of change. Teachers who take ownership of the change process in collaborative support systems and are provided with inservice sessions in which new knowledge is experientially explicated and incorporated into familiar practices have been found to clarify and strengthen the relationship between their knowledge and practice (Duffy, 1993; Fenstermacher & Richardson, 1993; Gallego & Hollingsworth, 1992; Richardson, 1990; Roehler & Putnam, 1991; Short et al., 1992). These findings reinforce the greater influence of internal factors of teacher development.

Chapter Summary and Preview

Both the study of teaching and research on reading instruction help explain the relationship between instruction and learning. While sometimes the two bodies of research intersect, other times their

relationship is more tangential. However, their place in the larger sphere of educational research insures their mutual reinforcement of the discipline's major paradigm.

The study of teaching began at the turn of the century. Teacher ratings by school supervisors were based on the possession of a sunny disposition and the maintenance of a well-controlled classroom. The rise of scientism during the 1920's greatly influenced both the study of teaching and reading, and consequently reading instruction. Researchers promoting a scientific study of teaching introduced instruments designed to provide more objective measures of personal characteristics, and introduced measures of effective teaching based on standardized student outcomes.

By the middle of the century, educational research had become deeply entrenched in the scientific paradigm. Embedded in behaviorism, process-product research made both the study of teaching and teaching itself a scientific enterprise. Researchers identified and trained effective teachers in specific managerial behaviors within a teacher-led curriculum. In reading education, both research and instructional programs supported a teacher-centered, task-analytic approach to learning best suited to the acquisition of lower order skills rather than complex understandings and higher order processes. Thus the behaviors and principles of effective teaching were consistent with the assumptions and practices of ubiquitous basal programs. Effective teachers of reading, just like effective teachers in general, provided systematic instruction in hierarchial sets of skills and insured that their students demonstrated the required performance objectives. In Canada perhaps more than in the United States, the legacy of child-centered education continued as a vital force during the competency-based mandates of the 1970's.

The emergence of the cognitive perspective in other behavioral sciences challenged the premises underlying process-product research. The shift from behaviorism to cognition in the study of teaching during the 1970's led first to a focus on teachers' thought processes and presently to teachers' knowledge. Studies of teachers' thought processes focused attention in general on the influence of their implicit theories of teaching and learning and in particular of various subject areas including reading. The uncertain influence of teachers' theories on their practices was largely explained by contextual variables.

Current research in the study of teaching focuses on teachers' knowledge of particular subject areas as well as on how they instruct in those areas. In reading, the resurgence of focus on the reader's cognitive processes directed educators' attention to the negligence of higher level processes. The concurrent

movement toward constructivist, holistic approaches to reading instruction emphasizes the role of teachers' knowledge of reading processes, reading development, and reading instruction on effective literacy education. Although some external factors variously affect teachers' transition to meaning-based instruction, teachers' theories and knowledge appear to be the critical factors in their development. Teachers' knowledge can be made explicit through observation and interview and findings from this body of research confirm teachers' conservative response to change. Legacies left by process-product research in general and effective reading instruction research in particular continue to shape teachers' responses to educational change. Additionally, some instructional implications from current comprehension research appear similar to traditional instruction and require that teachers reconceptualize both comprehension and comprehension instruction. In Canada and British Columbia, once again, our legacy seems to have given us the edge in moving forward naturally into twentieth century literacy instruction.

Chapter IV describes the research methodology used in this study. The first part of the chapter presents an overview of the parent IEA Reading Literacy Study upon which this secondary analysis is based. In the second part of the chapter, the research methods used to identify factors underlying reading instruction and groups of teachers based on those factors, and those used to differentiate teacher groups are explained.

CHAPTER IV: METHODOLOGY

The purpose of this study is to identify factors underlying grade three reading instruction in Canada (BC), to describe teacher clusters based on these factors, and to examine differences between teacher groups on measures of other teacher and student variables. In accomplishing these purposes, this study reanalyzes one education system's data from the second International Association for the Evaluation of Educational Achievement (IEA) Reading Literacy Study. The international study involves 32 education systems, 10,500 teachers and over 200,000 students. The two components of the study were the student testing program and the background questionnaires completed by students, teachers, school principals and each National Center. While work began in 1986, and data collection took place in 1991, the vast amount of data means analysis will continue for several years. Indeed, extensive secondary exploration of the data is assumed in IEA studies (Husen, 1979). My study will represent one of the many smaller, more focused studies presently emerging from individual participating countries.

The general aim of the IEA Reading Literacy Study was "to estimate the levels of reading development of 9- and 14-year olds in each country" (Lundberg & Linnakyla, 1993, p. 7); and another major aim was "to identify differences in policies and instructional practices in reading and to study the ways in which they relate to students' achievement and voluntary reading" (Elley, 1992, p. 3). These aims may be approached at multiple levels—international, cross-national, and within countries.

Of particular interest in any study of instructional practice is differential student reading achievement. Although instruction had little effect on student achievement at the international level (Lundberg & Linnakyla, 1993), the IEA anticipated that investigations by countries with minimal socioeconomic variations, such as Canada (BC), would find more influence of instruction.

A correlational research design was used to identify factors of reading instruction in British Columbia and differentiate homogeneous groups of teachers based on these factors on other teacher and student measures. Teacher data consisted of grade three teachers' responses to a cross-sectional survey; the teacher

questionnaire contained data not only about instructional practice, but also other data about the teacher and classroom. The student data consisted of two parts, students' responses to a background questionnaire and scores on a reading achievement test. The achievement test measured four domains of reading: word recognition, narrative comprehension, expository comprehension, and location of information. The student questionnaire contained items pertaining to possession of technological products, out-of-school literacy activities, and classroom instruction. While my analysis utilized all aspects of the teacher questionnaire, I did not use student-reported SES data (technological possessions) as those items were intended to discriminate at the international level rather than the national or classroom levels.

Reanalysis of the IEA teacher and student data took place in two stages—exploratory followed by confirmatory. Specifically, first- and second-order factor analyses initially simplified the teacher data related to instruction. Cluster analysis was then used to identify homogeneous groups of teachers based on individual second-order factor scores. Confirmatory analyses investigated between-group variance on measures of teacher characteristics, classroom conditions, student reading experiences, and student achievement. Figure 1 illustrates the research design.

Research Questions

All research questions refer to questionnaires and tests used in the 1991 International Association for the Evaluation of Educational Achievement (IEA) Reading Literacy Study for Canada (BC), Population A.

1. What reading instruction factors underlie teachers' responses to questionnaire items regarding their instructional practice?
2. Given derived reading instruction factors, what profiles can be developed to identify different homogeneous clusters of teachers?
3. Given such differentiated clusters of teachers, what differences exist among these groups on measures of teachers' characteristics and classroom conditions?
4. Given such differentiated clusters of teachers, what differences exist among these groups on measures of their students' reading experiences and reading proficiency?

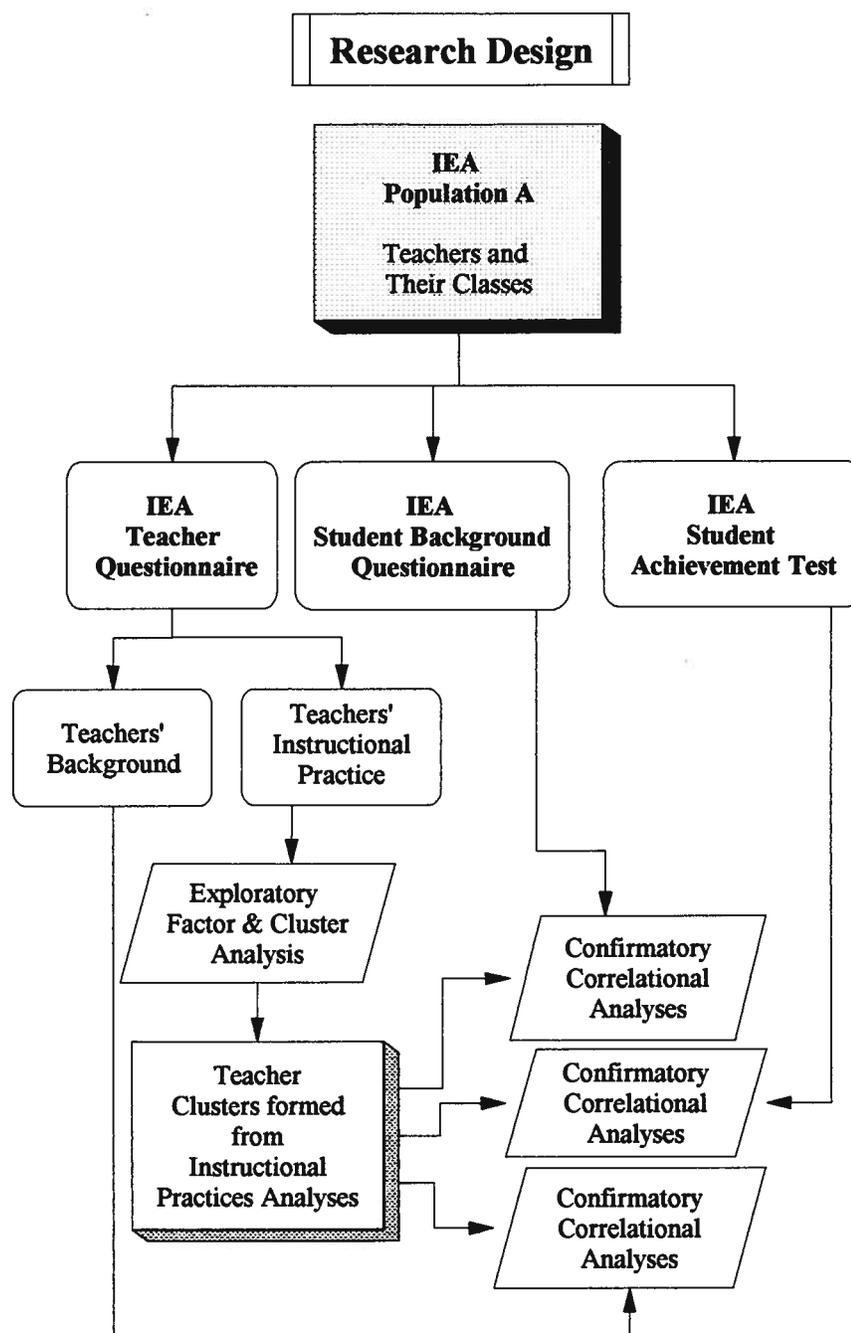


Figure 1. Overview of the Design of the Study

Definition of Terms

The following terms are defined by their group names at this time. Each group is comprised of multiple variables. Operational definitions and explanations of the development and composition of each variable follow in the section on Data Re-analysis.

Instructional practice.	Five Aspects of Reading Instruction comprise teachers' instructional practice: Reading Activities, Instructional Strategies, Views about Reading Instruction, Assessment Methods, and Assessment Focus.
Teacher characteristics.	There are eleven variables in this category namely Years of Teaching, Pre-service Training, Post-secondary Education, Study of Reading, three reading program aims (Comprehension, Critical Thinking, and Enjoyment), Professional Reading, Casual Reading, Homework, and Grouping.
Classroom conditions.	Four variables comprise this set of variables: Number of ESL students, Texts per Student, Multigrade Class, Principal Engagement.
Student reading experience.	The eight variables in this group consist of Reading Interactions (literacy events outside of school), Voluntary Reading, Homework Intensity, Self-rating, School Reading, and 3 different Perceptions of Reading Acquisition: Affective (or enjoyment-based); Low Cognitive (or drill and skill-based); and High Cognitive (or strategy-based).
Student reading proficiency.	Score in each of four reading domains: Word Recognition, Narrative, Expository, and Document.

Background of the IEA Reading Literacy Study

As a secondary analysis, the general design, sampling design, and research instruments were already established. The first part of this chapter explains information about the IEA methodology relevant to my

study. The second part of this chapter describes the research procedures particular to my reanalysis of the teacher and student data.

While large-scale comparative studies are a field in themselves, IEA studies are unique for their international proportions. The first IEA study in 1962 was in the subject of math. This landmark study was followed by a six subject survey, which included reading comprehension. Since that time, second studies in these subjects have been conducted and additional focuses proposed (e.g. classroom environments, computers in education, preprimary programs).

Since their inception, IEA studies have been tinged with debate and controversy (Husen, 1979). Much attention centers around validity issues, particularly construct validity. Current concepts of validity place construct validity as the whole of validity (Messick, 1989). According to this view all other types of validity are subsumed in construct validity. In the case of the IEA Reading Literacy Study then, the validity of measures used in my study—of instruction, student literacy activities, and student achievement—as well as any interpretation derived from them, require explicit attention to their limitations. As a reanalysis, however, my study assumes validity of the research instruments as they have already been used as the bases of international reports (Elley, 1992; Lundberg & Linnakyla, 1993; Postlethwaite & Ross, 1992).

As I will explain later, the construction of the instruments for IEA studies has been one of negotiation and compromise ranging from theoretical to political dimensions. Reactions related to construct validity include concerns regarding the grossness of the measures and the gap between current theory and the constructs of reading and reading instruction measured in the instruments. Reactions related to the use and social consequences of the findings include doubts about their practical worth and their potential misuse for policy-making, given the inevitable emphasis on test scores in the public literature (Husen, 1979; Higginson et al., 1993). Further discussion of these criticisms will follow in sections describing the development of the research instruments.

The previous IEA Reading Literacy study was conducted in 1973 (Thorndike, 1973). The general organization, sampling design, and procedures used to carry out the 1991 study remain the same as those of the 1973 study. However, dramatic changes in the understanding of reading processes and reading development, along with significant alterations in the types and levels of literacy required in today's world,

necessitated substantial revision of the research instruments. In the next three sections I will describe the general organizational structure of the IEA Reading Literacy Study, the international sampling design as well as the resulting provincial (BC) sample, and the development of the teacher questionnaire and student achievement tests.

General Organization of the IEA Reading Literacy Study

Many education systems throughout the world belong to the IEA. Most of these education systems represent entire countries. However, political structures in some countries mean that there can be more than one education system, and hence more than one IEA membership per country. Canada is one example of multiple membership. Because education in Canada is under provincial rather than federal control, provinces elect to join the IEA. In Canada, three provincial educational systems are members of the IEA: Quebec, Ontario and British Columbia. When an IEA study is planned, all member education systems are invited to participate. Thirty-two of the forty member countries which had expressed an interest to participate in the recent Reading Literacy study completed the study. In Canada, British Columbia was the only member which finally participated. Canada's involvement in the IEA Reading Literacy Study is therefore referred to as Canada (BC). My study focuses on data collected from Canada (BC).

With the participants identified, an International Steering Committee began work in 1988 and an International Coordination Center was established in Hamburg, Germany. Each participating educational system also appointed a National Research Coordinator (NRC) to oversee the conduct of all aspects and stages of the study. The NRCs worked together in several capacities and were responsible to the Steering Committee. Dr. Victor Froese was the National Research Coordinator for Canada (BC).

Sampling Design

In the initial phases of the study, sampling manuals were prepared by the IEA Steering Committee, i.e. a group of subject matter specialists with psychometric experience, and a Sampling Referee. The manuals were distributed in 1988 and 1989 to all NRCs. NRCs were responsible for preparing and submitting for approval sampling plans according to their situation to Dr. Kenneth Ross, International Sampling Referee.

The desired international target population consisted of two groups, Population A and Population B.

They are defined as follows:

Population A. All students attending mainstream schools on a full-time basis at the grade level in which most students are aged 9:00-9:11 years during the first week of the eighth month of the school year.

Population B. All students attending mainstream schools on a full-time basis at the grade level in which most students are aged 14:00-14:11 years during the first week of the eighth month of the school year.

Since my study is concerned with Population A only, the remaining description of the sampling design is limited to that group.

Using the above definitions as guidelines, the NRCs were responsible for formulating their own national target population. This population "usually represents a subset of the students described by the desired international target population. The difference between these two populations is referred to as the "excluded population" (Ross & Postlethwaite, 1988, p. 2). The national target population for Canada (BC) was all students in Grade 3 except those in special education or government native schools.

Standards for probability sampling were established by the IEA Steering Committee. Sampling manuals designated the general design framework as a "stratified two-stage cluster design sample in which schools will be selected at the first stage with probability proportional to size, followed by the selection within each sample school of one, or two, intact classes of students with probability proportional to size" (Ross & Postlethwaite, 1988, p. 11). Again, NRCs were responsible for preparing and submitting for approval samples from their particular situations. In British Columbia, the samples were defined by Dr. Jim Gaskell of the University of British Columbia. Table 2 outlines the sample description for British Columbia.

Five geographical regions created by the British Columbia provincial government for administrative purposes, and one group of private schools dispersed throughout the five regions, were used as the first stage of sampling. The five regions consisted of Vancouver Island, the Coast Region, the Lower

Table 2

Summary of IEA and Actual Samples Used in This Study

Region	Number of schools in region	Number of schools participating
Vancouver Is.	23	22
Coast Region	10	9
Lower Mainland	69	65
B.C. South	27	27
B.C. North	14	14
Private Schools	14	13
Totals	157.00	150.00

^aDue to problems of accessing the weighted international data, this study used local data for analysis. Thus the sample for this study included 150 schools, 154 teachers, and 2813 students.

Mainland, BC South, and BC North. The student sample represents both the planned 1.2% excluded population and the 2.33% excluded from testing due to learning disabilities or language barriers.

Research Procedures and Instruments: The Student Achievement Test, Student Background
Questionnaire, and the Teacher Questionnaire

Since the first IEA Reading Literacy Study in 1973, dramatic changes in understandings of reading processes and reading development, and consequently understandings of appropriate and effective instruction, have occurred (see chapter II for discussion of these changes). These changes indicated the need for different expectations about student achievement—criteria not reflected in earlier versions of the IEA reading tests (which focussed on comprehension, word knowledge, and speed). These shifts in understanding also required that the instrument identifying instructional variables (the teacher questionnaire) reflect implications from both past and present perspectives of reading instruction. In other words, it was not enough to make simple revisions on the 1973 instruments. The production of the achievement test and the teacher questionnaire involved significant rethinking as well as considerable debate among all those involved in their construction.

Similar procedures were used for constructing both the achievement tests and the teacher questionnaires. While initial work began in 1986, special committees of NRCs met in 1988 and devised first drafts of the instruments. Work on these drafts was continued by individual members of the NRC group as well as members of the International Coordinating Center. These revisions were resubmitted to all NRCs, whereupon substantial revisions of the pilot instruments were negotiated in general meetings of the NRCs. The process was further complicated by translation problems. Questionnaires were pilot-tested in judgement samples in all countries. Analysis of the pilot-test instruments was limited to descriptive statistics of each item, which served as the basis of decisions about final revisions. Three versions of the achievement test were piloted in each country on which decisions about the final test were based.

It is important to emphasize that the sheer number of people involved and their varying perspectives on reading and on literacy necessitated a fair amount of compromise throughout the designing and revising of the instruments. It is the complex theoretical (and ultimately the political) context, which drives the negotiation and resultant limitations of such large scale studies as the IEA Reading Literacy Study.

Schedule of Data Collection and Return of Data

A time frame was established in which countries in the southern hemisphere completed the tests and questionnaires in 1990, and those in the northern hemisphere in 1991. Several months were allowed for data return. Data collection in Canada (BC) took place in March 1991 and the data were returned in June 1991.

Identification System

Special care was given to developing an identification system, both to insure anonymity and to facilitate data processing. Each student, teacher and school was identified by a unique identification number so that each ID occurred only once in each data file. A sequence of ID codes was marked on each instrument in this order: school, class, teacher, student, and stratum.

Additionally, student name forms were completed by the teacher of each tested class. Information on the name forms included name of the student, student ID number, date of birth, gender, language used in testing, indication of any incomplete parts of the test, and remarks about absence or exclusion.

Student Achievement Test and Student Background Questionnaire

Literacy demands today are markedly different from those of even a generation ago. Historical studies of literacy illustrate the changing levels and kinds of literacy necessary to participate in society (Resnick & Resnick, 1977). Whereas recitation of religious texts sufficed in the last century, full literacy today involves an array of higher order thinking processes, multimodal abilities, and competence with a variety of text forms and purposes (Heath, 1991). Wells (1990) describes full literacy as "the disposition to engage appropriately with texts of different types in order to empower action, feeling and thinking in the context of social action" (p. 14).

Validity of test items in any large-scale assessment study is a subject of ongoing concern. The IEA set out to assess "the linguistic and cognitive processing of those written language forms required by a literate society and/or valued by an individual." This definition attempted to establish literacy as both

a cultural practice and an intellectual achievement. However, critics argue that the test is a recipe for a poorly-focused snapshot of independent dimensions of reading (McLean, 1990). Assessment has become a critical issue in literacy education and notions of construct validity of assessment measures are being challenged (Little, 1990). Even twenty years ago Husen (1979), writing about IEA studies, admitted the superior validity of findings based on longitudinal data. There is a move in the literacy assessment literature towards more direct and contextualized measures, as well as measures based on extended engagement with meaningful text (Valencia, Hiebert & Afflerbach, 1994). Along with these developments has come increased sensitivity to the limitations of traditional forms of formal testing (e.g. multiple choice; and the use of single words, phrases, and short passages). Resolving theory and practice in large scale assessments is clearly difficult, although it is possible to some degree (e.g., 1992 National Assessment of Educational Progress or NAEP in the United States; the 1994 School Achievement Indicators Program or SAIP in Canada). It is certainly an issue which IEA researchers continue to grapple with in present and planned studies. With these limitations in mind, I continue the description of the student achievement tests.

Concerted efforts to produce meaningful measures of reading proficiency were put forth by all those involved in the 1991 IEA Reading Literacy Study. Some notable features of the achievement measure relate to passage content, text type, passage length, and question types. To enhance comparability of the test, great care was taken to develop and include items which represent cross-cultural experiences, as well as cross-cultural reading processes. Extensive discussions by NRCs before and after piloting as well as several stages of statistical analysis after piloting were some of the measures taken "to make the tests as appropriate as possible for each cultural group" (Elley, 1992, p. 96). In regards to the notable features listed above then, passage content attempted to reflect common cross-national experiences at home, in school, and in society. Text types presented were narrative, expository, document, and word recognition. These domains were defined as follows:

Narrative: continuous texts in which the writer's aim is to tell a story—whether fact or fiction.

Expository: continuous texts designed to describe, explain, or otherwise convey factual information or opinion to the reader.

Document: structured information displays presented in the form of charts, tables, maps, graphs, lists, or sets of instructions.

Passage length varied from requiring approximately 15 seconds to more than two minutes reading time. Question types included multiple-choice, open-ended (with either a few words or a few sentences as answers), and following directions in a variety of ways. Students wrote the test in two 75 minute sessions, as well as completed an untimed background questionnaire of reading literacy variables. The first day consisted of answering the word recognition and comprehension (including document) items. The second day consisted of writing the comprehension (including document) items.

The student questionnaire consists of items directed to the following aspects of reading development: gender, home language, socioeconomic status, number of books at home, library use and resources, self-rating in reading, television viewing habits, homework, and type of instruction they received at school. The Student Background Questionnaire is reproduced in Appendix A. The Student Achievement Test was unavailable for copying.

Teacher Questionnaire

Reading instruction has evolved in response to changing conceptions of literacy as well as in response to instructional implications of current meaning-based, constructivist conceptions of the reading process and reading development. These changes arose in the midst of deeply entrenched beliefs about reading as a mechanistic process and learning to read as a compilation of skills acquired through drill. Several sections of the IEA teacher questionnaire were formulated to reflect these divergent assumptions about reading instruction that have arisen in the field over the last 20 years. Other sections pertain to teacher characteristics and teaching conditions. A copy of the teacher questionnaire is provided in Appendix B.

The purpose of the teacher questionnaire was to identify some teacher and educational factors influencing literacy. The basic form is one of conceptually-related sections each consisting of several questions of one or more items. Response to most items is in the form of a Likert-type scale indicating degree of agreement or frequency of occurrence. Some items require a yes/no response; while one question

requires ranking of importance. Two of its developers describe the process of constructing the questionnaire:

In the construction of the questionnaire, the National Research Coordinators (NRCs) from the participating countries worked cooperatively to identify those indicators that were conceived, from experience or on the basis of previous research, to be important either for explaining differences among pupils, among classes or schools within countries, or among systems of education. Once the indicators had been identified, decisions were made on how many questions were needed to measure each indicator (Lundberg & Linnakyla, 1992, p. 9).

Some argue that the final items are simply reflections of the most common teaching practices around the world (McLean, 1990). Such a rationale, while on one hand justified, "does not appeal to those working to change practice" (McLean, 1990, p. 69). Herein lies the heart of a critical issue in assessment—its use. Historically, assessment has served to perpetuate existing practices. Consequently, some argue that traditional measures of student achievement can and should be used as a vehicle of instructional change (Resnick & Resnick, 1992). That is, findings derived from instruments based on what should be, rather than what is, could potentially have a more powerful effect on changing teaching and learning than any other existing system. How and if future IEA studies address this issue remains to be seen. In the pilot questionnaire there were 11 main indicators and 4 sub-indicators derived from one of the main indicators. Each indicator was represented in one or more questions; and each question contained one or more items (up to 16). Thus several subvariables were combined into major variables. These major variables, or groups of variables, were referred to as constructs. The following constructs were developed from the literature and from experiences of those involved in the construction of the questionnaire:

1. teacher and student language
2. teacher training and experience
3. teacher acquaintance with class
4. class size
5. grouping
6. allotment of time for teaching and homework
7. resources
8. instruction and learning
 - a. teaching aims
 - b. instructional strategies
 - c. reading activities
 - d. assessment
9. remedial help
10. parental support
11. school management

Additionally, items related to instruction and learning, teaching aims, instructional strategies, reading activities, and assessment were carefully constructed to distinguish assumptions and practices related to current polar approaches to reading instruction—i.e., code- and skill-emphasis, or comprehension and meaning-emphasis orientations (Lundberg & Linnakyla, 1992, p. 9). For example, systematic agreement with such statements as, "When my pupils read to me, I expect them to read every word accurately", "Children should not be encouraged to read a word they don't know", "Children who can't understand what they read haven't been taught proper comprehension skills", and "Reading learning materials should be carefully sequenced in terms of language structures and vocabulary" indicate a teacher who holds traditional views about reading literacy instruction. Conversely, systematic disagreement indicates the possibility of meaning-based views. Systematic agreement with such statements as "Most children improve their reading best by extensive reading on their own", "Children should understand why they are reading", "Parents should be actively encouraged to help their children with reading", and "Children should be encouraged to read texts they have written" identifies those with meaning-based views.

The final version of the teachers' questionnaire consists of 46 questions and 160 items. Categories of questions in the final questionnaire include educational training; information about the class being tested; aspects of teaching (reading activities, aims of reading program, instructional strategies, grouping practices, types of texts taught, views about issues in literacy instruction, ways to encourage reading, assessment matters, homework); classroom library; school library; and school organization. Some constructs were added and some existing ones revised by adding, deleting, or rewording items. The two major revisions from the draft questionnaire are as follows: one, the addition of a 26 item question regarding views of issues in reading instruction; and two, the substitution of two multiple-item questions about instruction of different kinds of text with one three-item question.

During international data analysis, questions were organized into three main variables: proximal teaching conditions, teacher characteristics and teaching strategies. Indicators of effective instruction were derived from factor analysis within these major groups. The following eleven international constructs, or multiple variable indicators, of teaching were empirically established (discussed in Lundberg & Linnakyla, 1993, pp. 48-50, 58-62; and in Postlethwaite & Ross, 1992, pp. 10-13).

1. **High demand and structure:** The extent to which the teacher believed that the pupils should be assessed, their reading aloud corrected immediately, vocabulary taught (from word lists), and materials structured.
2. **Phonics teaching:** The extent to which the students in class were involved in learning sound-symbol relationships and word attack skills.
3. **General emphasis on assessment:** The extent to which the teacher used exercises and tests in workbooks and textbooks, multiple-choice and open-ended questions.
4. **Assessment of lower order skills:** The extent to which the teacher assessed word recognition, decoding, vocabulary and sentence understanding.
5. **Comprehension through graded materials:** The view that the teacher took about accurate reading, sequenced materials, and the necessity for children to understand what they read.
6. **Comprehension instruction:** The extent to which students in class were involved in activities designed to encourage thinking about the meaning of what they were reading.
7. **Active teaching of comprehension:** The extent to which the teacher emphasized the learning of new vocabulary, explained the background to stories, encouraged students to compare stories, and assessed vocabulary and comprehension.
8. **Encouragement to read:** The extent to which teachers encouraged their students to read more and to use the library.
9. **Taking student interest into account:** The extent to which the teacher used knowledge of student interests gained from records and informal observation.
10. **Story reading aloud:** The extent to which the teacher reported that he/she read aloud to students in order to encourage them to read more.
11. **Literature emphasis:** The extent to which the teacher reported his/her students to be involved in independent reading, discussing books, and reading plays and other materials.

In Canada (BC), the most frequently occurring instructional factors were literature emphasis, story reading aloud, and taking student interest into account. The least frequently occurring factors were assessment of lower order skills and general emphasis on assessment. Although assessment of lower order skills positively related to student achievement (.17), no significant correlations with student achievement for any factor were found for Canada (BC). These findings from international analysis will be compared with national-level findings from this study in Chapter 5.

Data Analysis

This re-analysis of the IEA teacher and student data begins with exploratory data analysis techniques (Hartwig & Dearing, 1979; Leinhardt & Leinhardt, 1980; Tukey, 1977) before undertaking confirmatory analysis. Exploratory data analysis is based on the assumption that the more one knows about the data the more effectively data can be used to develop, test, and refine theory (Hartwig & Dearing, p. 9). Coming to know the data then is a "phase of empirical research activity, which follows data collection or acquisition and precedes the application of confirmatory or traditional inferential procedures" (Leinhardt & Leinhardt, 1979, p. 86). Or as Tukey originally put it so simply, "It is important to understand what you CAN DO before you learn to measure how WELL you seem to have DONE it" (Tukey, 1977, p. 1).

The function of exploratory data analysis is to simplify complex data or deepen data description. Thus the process is ultimately a search for patterns or structures in the data. This process contrasts with confirmatory analysis, which involves imposing a particular theory then assessing how precisely the data fit the theory (Tukey, 1977, p. 11). What is unique about exploratory data analysis is that data-derived theory is compared to models derived from theory. In the case of my study, I began with exploratory data analysis in order to create a meaningful description of reading instruction in Canada (BC). Specifically, the data are described on two levels. The first level identifies factors of reading instruction in Canada (BC). Although international instructional factors had already been derived, different factors would derive from a national data set for two reasons: one, different data sets are involved; and two, the smaller national sample prevented factoring variables across sections of the teacher questionnaire as was done in the IEA analysis. In the secondary analysis, factors were derived from within selected main sections of the questionnaire. The second level of exploratory analysis identifies clusters of teachers relative to score patterns on derived variables. Confirmatory analyses are based on these descriptions. Specifically, differences between teacher groups are investigated on measures of teacher characteristics, classroom conditions, students' reading experiences, and students' reading achievement.

The aspects of methodology unique to my study, then, are the exploratory design and statistical procedures used to reanalyze the IEA teacher and student data. The remainder of this chapter describes the statistical procedures used for describing reading instruction in Canada (BC), identifying homogenous

groups of teachers, and differentiating those groups both in terms of two kinds of teacher variables and two kinds of student variables.

Accessing the Data

The first matter concerning analysis was a practical one: loading the data onto an available system. Following preliminary comparative analysis of the international data, IEA provided each participating country with their own national data set which had been put onto computer disks. Although I had initially planned to use the cleaned and weighted BC (Canada) data from IEA, it proved to be inaccessible to existing systems at UBC for several reasons. One major reason was related to the size and organization of the file. Because IEA had aggregated data from all instruments into one file, the size was both unwieldy and impossible to edit. A decision was therefore made to use the data which had been coded and scored by an independent consulting group at the University of British Columbia before it had been forwarded to the Data Analysis Centre for IEA in Germany. For the local data, each data base had been put on separate file. These data were loaded onto the mainframe system at UBC and analysis was conducted using SPSS-X.

Research Methodology for This Study

The methodology used in the re-analysis of the teacher and student data will be described in order of the research questions.

Research Question One

What reading instruction factors underlie teachers' responses to questionnaire items regarding their instructional practice?

The IEA teacher data for Canada (BC) fulfills the recommended conditions for exploratory factor analysis: "Exploratory factor analysis is ideal when data are complex, and it is uncertain what the most important variables in the field are" (Kline, 1994, p. 10). Factor analysis assumes that underlying dimensions can be used to explain complex data and procedurally, can be described as a data reduction technique (Borg & Gall, 1983). The aim of factor analysis is to simplify complex sets of data by

"identify(ing) a relatively small number of factors that can be used to represent relationships among sets of many interrelated variables" (Norusis, 1993, p. 47). A factor may be defined as a "dimension or construct which is a condensed statement of the relationships between a set of variables" (Kline, 1994, p. 5). In this study, factor analysis was used to identify the underlying dimensions of grade three teachers' instructional practice of reading.

Preparation for factor analysis

Five Aspects of Reading Instruction were determined based on five conceptually distinct sections of the teacher questionnaire: Reading Activities, Instructional Strategies, Views of Reading Instruction, Assessment Methods, and Assessment Focus. Additionally, several items from other sections conceptually related to any of the five Aspects of Reading were considered. Frequency distributions were performed on these other possible constituent variables, and those with lack of variance eliminated. For example, library use was dropped from analysis since over 98% of the teachers reported the existence and use of school and classroom libraries. Table 3 presents a summary of the components of the five Aspects of Reading used in this study.

While the constituent variables of Reading Activities and Views about Reading Instruction all came from single multiple-item sections of the questionnaire, Instructional Strategies, Assessment Methods, and Assessment Focus were composed somewhat differently. For Instructional Strategies, attempts were made initially to include items from other smaller sections in this analysis. Grouping, encouragement-to-read strategies, text types taught, and library use, for example, could be considered instructional strategies. Recoding problems and irregular response distributions prevented some of these items from being used. The use of grouping factored separately when a three factor solution was used, so it was decided to leave it for later analysis of teacher group differences. In the end, items from the "text types taught" and "instructional strategies" sections constituted the variables of Instructional Strategies.

Regarding the two aspects of assessment—Assessment Methods and Assessment Focus—it was initially thought best to combine the three sections of the questionnaire pertaining to assessment. The questionnaire contained two sections on assessment methods, and one on dimensions of reading assessed (e.g. vocabulary, phonics skills, literary appreciation). Since several attempts at factor analyses

Table 3

Summary of Aspects of Reading Instruction Used in This Study

Aspect of Reading Instruction	Number of Items	Items Used
Reading Activities	28	20a - 20bb
Instructional Strategies	16	23a - m, 27a - c
Views of Reading Instruction	26	28 (1) - 28 (26)
Assessment Method	13	30a - i, 32a - f
Assessment Focus	10	31a - j

Note. All items for each Aspect of Reading Instruction are from one complete question except for Instructional Strategies which includes 3 items from 2 smaller questions, and Assessment Method which consists of all items from 2 questions.

consistently grouped all the dimensions of assessment variables as one factor, it was decided to subdivide assessment into two aspects. Assessment Methods consists of two sections with a total of 13 variables. Assessment Focus consists of one section with 10 variables.

The final number of items in each Aspect of Reading Instruction was as follows: Reading Activities—28 items, Instructional Strategies—16 items (including three items from two other smaller sections), Views about Reading Instruction—26 items, Assessment Methods—13 items, and Assessment Focus. Once constituent variables for each of the five Aspects of Reading Instruction had been finally identified, missing values were replaced with means and variables recoded as required.

Factor analysis

Two models of exploratory factor analysis, each involving several factor number solutions, were applied in order to discover the main constructs of each Aspect of Reading Instruction. Interpretation of constructs was based on assumptions characterizing three dominant perspectives in reading instruction identified in reading methodology textbooks (e.g., Cooper, 1993; McGee & Richgels, 1990), discussed in current research (Adams, 1990; Goodman, 1992; Pearson et al., 1992), and used as the basis for grouping teachers in other research (deFord, 1985; Hermann & Sarracino, 1993; Hollingsworth, Reutzell, & Weeks, 1990).

To derive the first-order factors, the five Aspects of Reading Instruction were analyzed using both Principal Components followed by Varimax rotation, and Image Analysis followed by Oblimin Rotation. Principal Components and Varimax Rotation produce independent (orthogonal) factors ranging in degree of importance, while Image Analysis and Oblimin Rotation produce inter-related (non-orthogonal) factors. Aspects were then re-analyzed based on the number of factors with eigenvalues greater than one and scree test results, again using both factoring methods. Additional analyses using fewer factors were conducted if the data seemed it could be further simplified. For example, the appearance of single variable factors, or groupings of variables which were rationally related to other groupings, suggested the appropriateness of further exploration of the data. As before, both Principal Components and Image Analysis were applied.

Decisions regarding the final number of factors at this stage were based on both conceptual interpretability and statistical fit. Although both analytical modes yielded similar results, inter-correlations

produced for Principal Components were significantly higher than those produced for Image Analysis. Pearson correlation coefficients were then computed among the final factors, and a multi-trait multi-method matrix constructed to ascertain validity of second-order factors.

Second-order factor analysis was conducted in order to provide a multidimensional description of Instructional Practice. Regarding the ten first-order factors as variables, the second-order analysis was performed in the same manner as the first-order analysis. That is, both Principal Components and Image Analysis were used and the number of factors, constituents of factors, and strength of correlations studied for the most interpretable result. Factor scores were then produced for each teacher for constituent variables of the second-order factors.

Research Question Two

Given derived reading instruction factors, what profiles can be developed to identify different homogeneous clusters of teachers?

Individual teachers' factor scores were transformed into standardized scores (z-scores) which were then used for clustering teachers. Specifically, a case-wise hierarchical cluster analysis of individual teacher second-order factor scores was used to identify homogenous groups of teachers. In this method, cases are progressively agglomerated until they form one cluster. Once a case is assigned to a group it is unavailable for membership in another group. Ward's method was selected as the clustering criterion.

Several group-number solutions were examined. Criteria for the best solution related to the distribution of subjects across groups, number of groups relative to total sample, and theoretical interpretability. Mean group scores for each of the second-order factor variables were then computed and profiles produced across each second-order factor.

Research Question Three

Given such differentiated clusters of teachers, what differences exist among these groups on measures of teacher characteristics and classroom conditions?

This section first describes procedures for defining two groups of Teacher Background variables used in this study then identifies statistical procedures used for correlational analyses of teacher groups on these variables.

Formulating teacher characteristic and classroom condition variables

All possible variables were identified from the remaining variables not used in factor analyses. Frequency distributions of those items were inspected and initial selections made on the basis of variance. Approximately one-third of the possible variables were eliminated because of extremely irregular distributions. Categories of eliminated variables included teacher age, teacher gender, staff meeting activities, and classroom library materials and use.

An examination of the remaining variables suggested two categories of Teacher Background—Teacher Characteristics and Classroom Conditions. Table 4 summarizes the definitive features of these background variables. Further explanation of their development occurs after definitions are given.

Following are operational definitions of each of the Teacher Background variables used in this study.

Years of Teaching:	Number of years the teacher has taught.
Pre-Service Training:	Number of years of pre-service teacher training.
Post-Secondary Education:	Number of years of post-secondary education.
Study of Reading:	Number of hours of a teacher's further study of reading.
Comprehension:	The importance of the instructional goal of comprehension rated by a teacher.
Critical Thinking:	The importance of the instructional goal of critical thinking rated by a teacher.
Enjoyment:	The importance of the goal of making reading enjoyable rated by a teacher.
Professional Reading:	The frequency with which a teacher read articles on teaching, articles on reading, and children's books.

Table 4

Summary of Teacher Background Variables Used in This Study

Group	Name	Type of Variable	Type of Measure	Items Used
Teacher Characteristics				
	Postsecondary Education	S	I	5
	Preservice training	S	I	4
	Years teaching	S	I	9
	Study of reading	S	I	6
	Readership			
	Professional	C	I	8a, 8b, 8i
	Casual	C	I	8c, 8d, 8e, 8f, 8g, 8h
	Reading Goals			
	Comprehension	R	I	22c
	Critical thinking	R	I	22f
	Enjoyment	R	I	22i
	Homework assignment ^a	S	D	34
	Grouping ^a	S	D	24
Classroom Conditions				
	ESL students	S	I	13
	Texts per student	S	I	21
	Multigrade ^a	S	D	11
	Principal Engagement	Ct	I	44a, 44b, 44c

Note. S=Single variable; C=Composite variable; I=Interval scale; D=Dichotomous scale; R=Rank scale.

^aChi square statistical tests used for these variables. All other variables were tested with analysis of variance.

Casual Reading:	The frequency with which teachers read books on history, books on art, books on science, novels, poems, and plays.
Homework:	Whether or not a teacher assigned homework.
Grouping:	Whether or not a teacher grouped students for reading instruction.
Multigrade:	Whether or not a teachers' class is more than one grade.
Texts per Student:	Number of books for each student available during reading instruction.
ESL Students:	Number of English as a Second Language students in the class.
Principal Engagement:	The degree to which the school principal discusses explicit achievement standards, asks for evaluation results, and makes suggestions about instructional methods in reading.

All 15 final variables are singletons except for two which are composites of several items within one question—Principal Engagement and Teacher Readership, which consists of two types, Professional and Casual. The variables pertaining to teachers' rating of reading program goals also requires some explanation. Steps taken for the creation of each teacher background variable to the point of preparation for correlational teacher group analysis are summarized in Table 5. Some specific explanations concerning the three composite variables follow.

One section of the teacher questionnaire asked teachers to rate their five most important instructional goals from a list of eleven goals. All but three of these variables were eliminated from consideration for correlational analysis due to either lack of variance or large numbers of missing data, since not all teachers responded to each item in this question. The three variables which met inclusion criteria of variance for Reading Goals were comprehension, critical thinking, and making reading enjoyable.

To construct Principal Engagement, three of six dichotomous variables in one question concerning the principal's activities in the teacher's reading program were identified on the basis of variance.

Table 5

Summary of Procedures Used to Construct Teacher Background Variables

Level of Variable	Procedure
Singleton	1. Inclusion rule of variance applied.
	2. Variable recoded.
	3. Missing data excluded.
	4. Frequency distributions produced.
Composite	1. Inclusion rule of variance applied.
	2. Variable recoded.
	3. Data transformation routines written and applied.
	4. Missing data excluded.
	5. Frequency distributions produced.

Variables were recoded, scoring codes were set to 0=no, and 1=yes, and missing data scored as zero (no). A maximum score was 3 (high level of Principal Engagement), and the lowest possible was zero.

The two Teacher Readership variables were created from nine variables of one question addressing the frequency with which teachers read various kinds of texts. All nine variables had normal distributions and were rationally divided into two types of Readership—Professional and Casual. To create measures of Teacher Readership, data transformation routines were written and applied. Missing data on any single constituent variable were also assigned as missing on both composite variables of Teacher Readership.

Frequency distributions of Principal Engagement and the Teacher Readership variables were checked with histogram displays before proceeding with correlational analyses. Teacher Readership distribution was normal, while distribution for Principal Engagement was somewhat negatively skewed, but acceptable. Appendices C, D, and E display frequency distributions of the Teacher Background composite variables used in this study.

Correlational analyses of teacher groups by teacher background variables

Two types of correlational analyses—Analysis of Variance and Chi Square—were performed as appropriate on each Teacher Background variable. Missing data for each variable except for Principal Engagement (described above) were eliminated from correlational analyses.

Research Question Four

Given such differentiated clusters of teachers, what differences exist among these groups on measures of student reading experiences and reading achievement?

Two measures of students' reading were used in analyses for answering this question: one measure of their reading experiences and another of reading proficiency. For both parts of this question, considerable preparatory work was required before final analyses were performed. The first part of this section

describes the procedures used for correlational analysis of teacher groups on measures of their students' reading experiences and the second part explains procedures used for correlational analysis of teacher groups on measures of their students' reading achievement.

Part 1: Student Reading Experiences

Data preparation. Data preparation for this analysis consisted of two stages: constructing measures of student reading experiences and aggregation of data. An overview of the preparation procedures is presented in Table 6. Table 7 summarizes the definitive features of the Student Reading Experience variables.

Possible variables were rationally identified in the student questionnaire and frequency distributions used as the criteria of selection. Six variables were rationally defined, five classified as non-school and one as school. One variable was a singleton, and five were transformed into composites. The following definitions of Student Reading Experience variables used in this study are given at the teacher aggregate level. Further explanation of the procedures used to create composite variables are described after the definitions.

- Voluntary Reading:** The frequency with which students report that they read books, comics, magazines, directions, and looked up information.
- Self-Rating:** Students' rating of themselves as very good or less than very good readers.
- Reading Interactions:** Whether or not students report that they receive a daily newspaper at home, and the frequency with which people read to the students at home, the frequency with which people outside the home read to the students, the frequency with which the students read at home, the frequency with which the students are asked about reading at home, and the frequency with which students are read aloud to at home.
- Homework Intensity:** The frequency with which students report that they receive reading homework and the time they spend on it.

Table 6

Summary of Procedures Used to Construct Student Reading Experience Variances

1. Inclusion rule of variance applied.
2. Variable recoded.
3. Data transformation routines written and applied.
4. Missing data excluded.^a
5. Frequency distributions produced.
6. Aggregate function selected.
7. Inclusion rule^a for correlational analysis applied.

Note. All variables were composites.

^aA teacher must have 7 or more students with scores on one variable.

Table 7

Summary of Student Reading Experience Variables Used in This Study

Name	Type	Number of items used ^a	Items Used	Aggregate function used ^b
Self-rating	D	1	15	%
Homework intensity	T	2	19, 20	%
Voluntary reading	I	6	26, 28, 30, 32, 33	M, SD
Reading interactions	I	5	5, 10, 11, 17, 18, 36	M, SD
Perception of reading acquisition				
Affective	I	4	16a, 16b, 16f, 16g	M, SD
Cognitive				
High	I	3	16c, 16e, 16k	M, SD
Low	I	4	16d, 16h, 16i, 16j	M, SD
School reading	I	5	38, 39, 40, 41, 42	M, SD

Notes: D=Dichotomous variable; T=Trichotomous variable; I=Interval variable

^aNumber of items from the student background questionnaire used to create a measure of student reading experience.

^bFunction used in correlational analysis.

Affective Perception of Reading Acquisition:

The degree to which students believe that ways of becoming a good reader include liking it, having good books around, having a good imagination, and having lots of time to read.

Low Cognitive Perception of Reading Acquisition:

The degree to which students believe that ways of becoming a good reader include doing homework, sounding out words, drilling at hard things, and doing written exercises.

High Cognitive Perception of Reading Acquisition:

The degree to which students believe that ways of becoming a good reader include concentrating well, learning the meaning of lots of words, and being told how to do it.

School Reading: The frequency with which students report that they read readers, storybooks, textbooks, and workbooks in class.

Each Student Reading Experience variable required different amounts and kinds of transformation. For all variables, however, missing data were eliminated both in the creation of the composites and for aggregate-level analysis. The development of these measures is described below.

School Reading was created from four interval variables representing four questions on the student questionnaire. Transformation routines were written and variables recoded as required to produce School Reading. Variance was normally distributed on this variable as shown in Appendix F.

Voluntary Reading was formed from six one-item questions directed to the amount of reading of different text genres. The six variables were rationally grouped into three text types: books (books), documents (directions, information), and popular texts (comics, magazines, newspapers). Frequency distributions were inspected for variability of the three groups of Voluntary Reading. Transformation routines were written and variable recoded to create one global measure of Voluntary Reading. The frequency distribution of the global variable was slightly skewed to the left but acceptable as is displayed in Appendix G.

Reading Interactions was based on six one-item questions rationally grouped to represent the nature and frequency of students' reading events outside of school. One constituent variable was dichotomous, the others were interval variables. Variables were recoded and transformation routines written and performed to construct the composite variable Reading Interactions. Appendix H presents the normal frequency distribution of Reading Interactions.

The three Perception of Reading Acquisition variables were created from an eleven-item question asking students to identify the three most important ways to become a good reader. Responses at the student level were inspected for number of students following directions. Students who checked more or less than three items were eliminated from analysis, which amounted to 15% of the student sample. The eleven variables were then rationally grouped to represent affective or cognitive beliefs about ways to become a good reader. Variable recodings and transformation procedures were performed to create three measures of Student Perception of Reading Acquisition. Frequency distributions of Affective, Low level Cognitive, and High level Cognitive Perceptions of Reading Acquisition are reproduced in Appendices I, J, and K.

The item from which Self-Rating developed was an interval variable, but in this study was transformed into a dichotomous variable. Since more than half the responses were the highest of the four possible ratings, it was decided to collapse the first three ratings into scoring code, and leave the fourth rating as the other scoring code. Appendix L displays frequencies of the recoded Self-Rating variable.

Homework Intensity was created from two interval variables, one directed to frequency of getting homework and the other to time spent on homework. Cross-tabulations of the two original variables were performed and the frequency distribution inspected. Responses were heavily skewed to one score (zero) while the responses to the other seven scores were normally distributed. This distribution is shown in Appendix M.

Decisions were made on particular aggregate functions for each Student Reading Experience variable. Percentage was chosen as the aggregate function for Homework Intensity and Self-Rating. Means and Standard deviations were selected for the aggregate functions for Reading Interactions, Voluntary reading, School Reading, and the three Perception of Reading Acquisition variables.

Student Reading Experience variables were then aggregated at the teacher level. Preliminary to correlational analysis of teacher groups by Student Reading Experience variables, descriptive analysis was performed at the teacher level: number of students, missing data on each Student Reading Experience variable, and percentage or means and standard deviations of each student variable. If a teacher had seven or less students representing one variable, that variable was eliminated from analysis for that teacher. In some cases, total class size was less than seven resulting in elimination of nine teachers. Thus the number of teachers used in each correlational analyses of Student Reading Experience variables was dependent on teachers having more than seven students with data for all or some of the variables.

Analysis. Finally, Analyses of Variance (ANOVA) were computed among teacher groups for each Student Reading Experience variable.

Part 2: Student Reading Achievement

This section describes procedures used for data preparation as well as for correlational analysis of teacher groups.

Data Preparation. Major preparation procedures for this analysis consisted of data cleaning, scale transformation, and data aggregation.

A separate file of student test scores was created from the main student data file. Criteria for inclusion in correlational analyses involved examination of both student and teacher data. The student test score file was listed and case records inspected for eligibility. Students with valid responses to at least 50% of the narrative, comprehension, and document search test items were included in any future analyses. This left 2533 students out of the original 2813. Thus approximately 10% of the student sample was excluded at this stage. Following aggregation of student data at the teacher level, another inclusion rule was applied. Teachers had to have seven or more students to be included in any future analyses. Teachers having fewer than seven students were assumed to be insufficiently represented.

Student test scores were originally provided as raw scores. Scores were transformed into Elley scores (1993), standardized scores used in the international analyses (mean=500, SD=100). Some items from

three of the reading achievement domains were eliminated from analysis: two multiple choice items from narrative, expository, and document, as well as two free response items from narrative. With editing complete, students' scores on the reading domains were collectively termed Student Achievement, and individually termed Narrative, Expository, Document, and Word Recognition. Table 8 details information about the final form of the reading proficiency measures.

Correlational Analyses of Teacher Groups on Student Achievement. This stage of analysis consisted of several procedures: reliability of each achievement domain, means and standard deviations of each domain at the student level, means and standard deviations of each reading domain at the teacher level, and Analyses of Variance of teacher groups on each measure of reading achievement.

Chapter Summary and Preview

This chapter described the foundational methodology of the IEA 1991 Reading Literacy Study used in this re-analysis. An exploratory correlational design was selected to derive first- and second-order factors underlying grade three teachers' instructional practice of reading. Cluster analysis based on teachers' scores of constituent second-order factor variables was chosen to identify and describe homogenous groups of teachers. A variety of teacher and student background variables, as well as student achievement variables, were identified or reconstructed from the teacher and student questionnaires and student achievement test in order to test differences among teacher groups.

Chapter Five will present results of the study in four sections, each section corresponding to each of the research questions. The first section outlines results of the factor analyses. Groups of teachers identified by cluster analyses are reported in the second section. The remaining two sections report results of correlational analyses of the teacher group, by teacher background variables in the third section, and by student background and student achievement variables in the fourth section.

Table 8

Summary of Student Reading Achievement Variables Used in Study

Domain	Number of Items	
	Original	Re-analysis
Narrative	24	20
Expository	21	19
Document	23	21
Word Recognition	40	40

Note. As per the 1991 IEA procedure, two multiple choice items were deleted from each domain, and an additional two free response items were deleted from Narrative.

CHAPTER V: FINDINGS

The purpose of this study is to identify factors underlying reading instruction in Canada (BC), to describe teacher groups based on those factors, and to identify differences between teacher groups in terms of teacher background, student background and student achievement. This chapter will present results of the study in four sections, each section corresponding to one of the four research questions. The first section discusses results of first- and second-order factor analyses conducted to delineate key constructs of reading instruction. In the second section, results of the cluster analysis used to identify groups of teachers are presented. The third section reports results of correlational analyses of teacher groups on measures of teachers' characteristics and their classroom conditions. Finally, results of analyses used to differentiate teacher groups on measures of their students' reading experiences and reading achievement are reported.

Research Question One

What reading instruction factors underlie teachers responses to questionnaire items regarding their instructional practice?

Factors of grade three reading instruction in Canada (BC) were derived through exploratory factor analysis. Factor analysis is one method serving the overall purpose of exploratory data analysis of uncovering structures in complex data. To maximally simplify the data on teachers' instructional practice, both first- and second-order factor analyses were conducted.

As explained in the methodology chapter, teacher responses to five main sections of the teacher questionnaire related to their instructional practice were factor-analyzed: Reading Activities, Instructional Strategies, Views of Reading Development, Assessment Methods, and Assessment Focus. These groupings were referred to in this study as Aspects of Reading Instruction. Factors which emerged from second-order

factor analysis were regarded as factors of Instructional Practice. (Refer to Table 3 in Chapter IV for specific identification of the questionnaire items used to define each Aspect of Reading Instruction.)

Two models of factor analysis were implemented during this exploratory stage: Principal Components followed by Varimax Rotation, and Image Analysis followed by Oblimin Rotation. As well, several factor-number solutions were explored in each model. Statistical criteria for retention of factors were eigenvalues >1.0 and a scree analysis. Interpretability was dependent on inspection of factor loadings and theoretical integrity. Specifically, meaning of the factor loadings was gained from examination of their magnitude and direction with level of significance .30 and above, and strong loadings regarded as .6 and above. Theoretical frameworks of factor meanings were (1) assumptions underlying Traditional, Whole Language, and Strategic perspectives of reading instruction, and (2) assumptions underlying behaviorist and cognitive views of teaching and learning.

Results of the first-order factor analysis of each of the five Aspects of Reading Instruction are described first, followed by results of the second-order factor analysis.

Part 1: First-Order Factor Analysis

Teachers' responses to 93 variables comprising the five Aspects of Reading Instruction were used to derive first- and second-order factors. Means, standard deviations, and intercorrelations of variables for each of the five Aspects of Reading Instruction are displayed in Appendix N, O, P, Q, and R.

Reading Activities

In this section, teachers indicated the frequency with which their students are engaged in 28 different reading activities. Two factors of Reading Activities were identified: Interactive Strategic (InterStr) and Basal-Controlled (BasCon). Table 9 identifies the variables and their factor loadings of the two-factor solution of Reading Activities.

I labeled the first factor Interactive Strategic because this factor indicated students are primarily involved in comprehension strategies and secondarily in communicative language activities. The variables with the strongest loadings in this factor were higher level comprehension strategies: predicting, generalizing, summarizing, and comparing. Diagramming story content, another comprehension strategy,

Table 9

Two Factor Analysis of Reading Activities

Variable	Factor	
	(Percentage of Variance accounted for)	
	InterStr (24.2%)	BasCon (7.5%)
Making generalizations and inferences	.70	.07
Relating experiences to reading	.70	.06
Studying style or structure of text	.68	-.04
Looking for theme or message ^a	.67	.32
Making predictions during reading	.64	.05
Comparing pictures and stories	.60	.28
Summarizing reading	.55	.29
Reading other students' writing	.53	.25
Discussion of books read by students	.50	.18
Student leading discussion about passage	.46	.17
Writing in response to reading ^a	.45	.39
Learning new vocabulary incidentally from texts	.40	.10
Reading in other subjects	.30	.25
Listening to teachers reading stories aloud	.27	.22
Dramatizing stories	.27	.60

(Table 9 continued)

Variable	Factor (Percentage of Variance accounted for)	
	InterStr (24.2%)	BasCon (7.5%)
Learning new vocabulary systematically (from lists)	-.15	.59
Answering reading comprehension questions	-.01	.59
Learning letter-sound relationships and/or phonics	.10	.57
Diagramming story content ^a	.36	.53
Learning other word-attack skills	.12	.51
Listening to students reading aloud to small groups or pairs	.22	.50
Playing reading games ^a	.36	.46
Drawing in response to reading ^a	.32	.45
Reading plays or dramas	.17	.45
Listening to students reading aloud to a whole class	.26	.41
Independent silent reading in a class	.05	.38
Learning library skills	.24	.32

Note. InterStr=Interactive Strategic; BasCon=Basal-Controlled

^aSignificantly loading items on both factors

loaded moderately (.36) on InterStr, but more strongly on BasCon (.53). The other group of significantly loading variables on the InterStr factor suggested an emphasis on using language for authentic, student-centered communication (reading other students' writing, writing in response to reading, and student-led discussions of books read by students).

I named the second factor Basal-Controlled because its key variables represent activities typical of basal or skills-based reading instruction: controlled vocabulary acquisition, comprehension worksheets, and letter-sound exercises. Two of the strongest loading variables on this factor indicated activities associated with the traditional or task-analytic approach to reading instruction—i.e., learning new vocabulary systematically from lists and learning letter-sound relationships. Other variables in the BasCon factor with moderate loadings also typify traditional reading activities—i.e., learning word-attack skills and listening to students read aloud. The strongest loading variable (although only by .01)—dramatizing stories—indicated that some sort of active involvement in narrative texts is important in this factor.

Of interest were variables with similar loadings on each factor. Diagramming story content, playing reading games, and drawing in response to reading loaded significantly on both factors but more strongly on BasCon. Similarly, writing in response to reading and looking for themes or messages loaded significantly on both factors but stronger on InterStr. These activities can be found in basal reading programs as program-directed activities, and in meaning-based programs as student-centered activities.

Instructional Strategies

Data for this analysis consisted of responses to (a) 13 items about the frequency with which teachers use various instructional strategies and (b) three items directed to the degree to which teachers focus instruction on narrative, expository, and document texts. Two factors of Instructional Strategies were found: Direct Instruction (DirIn) and Implicit Support (ImSup). Variables and their loadings of the two-factor solution are tabulated in Table 10.

The DirIn factor seemed to represent active instruction, but teacher- or program-centered rather than student-centered instruction recommended by current comprehension research (Pearson et al., 1991). The more strongly loading items of this factor emphasized the active role of the teacher in comprehension

Table 10

Two Factor Analysis of Instructional Strategies

Variable	Factor (Percentage of Variance accounted for)	
	DirIn (23.5%)	ImSup (11.6%)
Ask questions to assess text comprehension	.79	-.11
Ask questions to deepen understanding	.74	.07
Show children how to understand a text	.73	.17
Compare stories, poems, fables, and tales	.58	.13
Frequency of teaching expository text	.57	.12
Maintain graded sequence of text difficulty	.55	.04
Frequency of teaching narrative text	.30	.08
Encourage children to use the library more	.12	.68
Encourage children to read more	.14	.43
Encourage parents to read to children	.00	.77
Encourage children to use the library more	.12	.68
Encourage children to read more	.14	.43
Encourage parents to be involved in the reading program	.09	.71
Use materials you have prepared yourself	.32	.50
Accessing prior knowledge ^a	.38	.41
Frequency of teaching document text	.10	.41
Ask children to describe their strategy for understanding ^a	.37	.40
Read aloud to children	-.06	.39

Note. DirIn = Direct Instruction; ImSup = Implicit Support

^aSignificantly loading items on both factors

instruction. However, it seemed the type of comprehension instruction portrayed in this factor was not necessarily that which is associated with current strategic reading. Rather, it appeared more reflective of instruction consistent with a skills-based, or traditional, perspective of reading instruction. The strongest loading variable, "Ask questions to assess text comprehension", corresponds with a typical feature of traditional reading instruction—concentration on text content rather than text processing. Furthermore, the fact that this factor included the variable "Maintain graded sequence of text difficulty" indicated dependence on programmed materials. Finally, frequency of teaching of expository text (.57) and narrative text (.30) loaded on this factor, but did not contribute to interpretability as there no indication of preference for text types in different instructional approaches in the literature.

Whereas the DirIn factor stressed direct and active instructional strategies, the other factor highlighted facilitative strategies identified in the emergent literacy research (Harste et al., 1984; Heath, 1982; Wells, 1986). I named this factor Implicit Support because of the primary emphasis on several encouragement strategies. Given the importance of encouragement in this factor, it seems reasonable to say that child-centered instruction characterizes this factor. This interpretation helps explain the alternative meanings of the two variables which load equally on both factors ("Accessing prior knowledge" and "Ask children to describe their strategy for understanding"). Thus while these two strategies represented teacher-centered instruction in the DirIn factor, they were interpreted as child-centered strategies in the ImSup factor. These interpretations are consistent with the literature of both skills-based and strategic reading instruction. Finally, the inclusion of the variable, "Use teacher-made materials" indicated the importance of the teacher's response to her students' needs, thus supporting the underlying child-centered meaning of the ImSup factor.

Views of Reading Instruction

Data for this analysis consisted of responses to 26 propositions representing meaning-centered or code-emphasis views of issues in reading instruction. Two factors of teachers' views were found and termed Systematic Program (SysPro) and Holistic Immersion (Hollm). Table 11 displays the constituent variables and their factor loadings for this Views of Reading Instruction.

Table 11

Two Factor Analysis of Views of Reading Instruction

Variable	Factor (Percentage of Variance accounted for)	
	SysPro (16.0%)	HolIm (11.8%)
Reading materials should be carefully sequenced in terms of language structures and vocabulary.	.72	.02
Teachers should always group children according to their reading ability.	.68	-.26
Every mistake a child makes in reading should be corrected at once.	.67	.10
When my pupils read to me, I expect them to read every word accurately.	.64	.07
Class sets of graded reading material should be used as the basis for the reading program. ^a	.61	-.34
Children should learn most of their new words from lessons designed to enhance their vocabulary.	.56	.05
All children's comprehension assignments should be marked carefully to provide them with feedback.	.52	.22
9 year-olds should not have access to books they will read in the next year at school. ^a	.47	-.37
Children should not start a new book until they have finished the last.	.46	-.19

(Table 11 continued)

Variable	Factor	
	(Percentage of Variance accounted for)	
	SysPro (16.0%)	HolIm (11.8%)
Most of what a child reads should be assessed.	.43	.26
Teachers should carefully follow the sequence of the textbook. ^a	.43	-.38
Most children improve their reading by extensive reading on their own.	-.05	.00
Children should take a book home to read every day.	.02	.65
Teachers should keep careful records of every child's reading progress.	.18	.52
Children should be read to every day by the teacher from a story book.	-.14	.47
Parents should be actively encouraged to help their children with reading.	.04	.45
A word recognition test is sufficient for assessing children's reading levels.	.28	-.42
Children should always understand why they are reading.	.25	.41
All children should enjoy reading.	-.10	.39

(Table 11 continued)

Variable	Factor (Percentage of Variation accounted for)	
	SysPro (16.0%)	HolIm (11.8%)
Children should always understand what they are reading. ^a	.35	.39
Children should not be encouraged to read a word they don't know.	.04	-.36
Children should undertake research projects to improve their reading.	-.06	.35
Children who can't understand what they read haven't been taught proper comprehension skills.	.21	-.30
Children should always choose their own books to read.	.02	.25
Reading aloud by children to a class is a waste of time.	-.02	-.23

Note. SysPro=Systematic Program; HolIm=Holistic Immersion

^aSignificantly loading items on both factors

I named the first factor Systematic Program because that term captures essential features of the type of effective teaching derived from behaviorist research. Strong loading variables indicated the importance of these three features in this factor: the use of hierarchically structured materials, a high degree of student accountability for skills mastery, and the use of ability grouping. The remaining nine variables in this factor supported a task-analytic view of reading instruction and the role of the teacher as monitor and evaluator of students' skill mastery.

As with the SysPro factor, key variables in the Holistic Immersion factor captured its central meaning. The variables "Children should be encouraged to read texts they have written" and "Children should take a book home everyday" underscored the view which appeared to cut across all variables: the belief in child-centered integrative language experiences along with abundant opportunity to engage in holistic, enjoyable reading. Additionally, parental involvement in a child's reading development was an important component of this factor, as was keeping accurate records of each child's reading progress.

Some negatively loading variables helped strengthen interpretation of the HolIm factor. Thus systematic disagreement with some variables indicated opposing views. Rejection of word recognition as a test of reading ability, along with rejection of the variable "Children who can't understand what they read haven't been taught proper comprehension skills" suggested a belief that the focus of reading is comprehension and meaning rather than isolated skills. Similarly, rejection both of any notions of a lock-step standardized curriculum and use of ability grouping enforced the holistic, meaning-centered view of reading instruction in this factor.

Factor loadings for the variable "Children should always understand what they read" were, although moderate, nearly equally significant (.35 and .39) for both factors. In contrast, factor loadings for the variable "Children should always understand why they read" were significant only for HolIm indicating the value of another level of purposeful reading in this factor.

Assessment Methods

Teachers' responses to thirteen items from two questions pertaining to how they assess their students' reading abilities constituted the variables of Assessment Methods. Two factors were found and labelled Open and Contextual (OpCont) and Closed and Constrained (ClCon). Table 12 lists the variables and their factor loadings of the two-factor solution of this Aspect of Reading Instruction.

The variable groupings for each factor were unambiguous regarding type of assessment method and also indicated a general focus either on reading processes or products. Process-based assessment presumes teachers' knowledge of reading and reading development, in contrast to the "deskilled" view of teaching implicit in a focus on products (Shannon, 1987). Thus the two factors of Assessment Methods also suggested information about the status of the teacher.

I named the first factor Open and Contextual because collectively the variables seemed to stress teachers' observations of literacy events and attention to students' interests. Variables with the strongest loadings defined the factor and related rationally to the other constituent variables. It is important to note that several methods composing the OpCont factor can be used in both teacher-centered and student-centered ways—i.e., "listening to students read aloud" (e.g., for assessment of fluency or reading interests) and "oral discussions" (for assessment of recall or text interpretation). Whether the variables of the OpCont factor could be interpreted as student- or teacher-centered, could be gleaned by comparative inspection of loadings on some items. Thus, negative loadings of student-centered variables on the ClCon factor—"interviews" and "records and knowledge of student interest"—suggested the use of student-centered observations of literacy events in the OpCont factor. Thus the negative loadings were helpful in defining the OpCont factor in terms of not only form (informal) and substance (process) but focus (student).

The meaning of the variables constituting the Closed and Constrained factor—the use of workbooks and formal tests—were straightforward. This group of variables, along with the negative loadings of student-centered methods discussed above, indicated that in this factor students' reading development is controlled by workbooks and tests and teachers are controlled by materials.

Table 12

Two Factor Analysis of Assessment Methods

Variable	Factor (Percentage of Variance accounted for)	
	OpCont (21.5%)	ClCon (14.7%)
Listening to students reading aloud ^a	.63	.34
Interviews ^a	.62	-.30
Records of student interests	.60	-.21
Oral discussions	.60	.11
Knowledge of students' reading interests	.60	-.25
Listening to students reading	.57	.26
Oral questions on material read ^a	.53	.31
Informal observation	.50	.03
Written open-ended questions on material read	.46	.15
Comments from other teachers	.30	-.01
Exercises and tests in workbooks and textbooks	-.21	.74
Multiple choice questions in reading	.04	.63
Tests in workbooks and textbooks	-.08	.63
Standardized or formal tests of comprehension	.13	.46
Teacher-made vocabulary tests	.26	.41

Note. OpCont=Open and Contextual; ClCon=Closed and Constrained

^aSignificantly loading items on both factors.

Assessment Focus

Two general findings emerged from analyses of teachers' responses to the Assessment Focus items: one from the original one-factor solution and the other from the forced two-factor solution.

Initial analysis of the ten items of Assessment Focus produced one factor. This solution indicated assessment was focused on multiple dimensions of reading. However, word recognition, vocabulary, and comprehension not only accounted for most of the variance (35-40%) but were consistently strong loading variables on all exploratory solutions based on combined Assessment Method and Assessment Focus items. Table 13 displays results of the the one-factor solution.

A final two factor solution seemed to differentiate teachers' relative focus of assessment as Narrow and Objective (NarOb) or Broad and Subjective (BrSub). Variables and their loadings for the two factors of Assessment Focus are tabulated in Table 14. I termed the first factor Narrow and Objective because its components are most conducive to codification, and consequently associated more with traditional reading instruction. In contrast, variables of the Broad and Subjective factor are less codifiable and associated more with instruction based on top-down views of reading. In turn, top-down views tend to premise the influential role of the reader in comprehension (Goodman, 1985). Thus two factors explained an emphasis on smaller, more measurable units of language such as vocabulary, phonic skills, and sentence understanding (NarOb); or an emphasis on larger, less standardized units of language such as use of background knowledge and amount of reading (BrSub). It is interesting to note that the three variables from the NarOb factor which loaded significantly with the BrSub factor (text comprehension, sentence understanding, and reading study skills) dealt with larger units of language as well.

In sum, a two-factor orthogonal solution was found to be optimal for each of the five Aspects of Reading Instruction. The factors derived from teachers' responses to items composing the five Aspects of Reading Instruction are summarized in Table 15.

Part 2: Second Order Factor Analysis

Following identification of the first-order factors, a second-order factor analysis was conducted in order to identify factors which cut across all five Aspects of Reading Instruction. The second-order factors were broadly regarded as factors of Instructional Practice. Teachers' responses to the ten first-order factors

Table 13

One Factor Analysis of Assessment Focus

Variable	Factor 1
Vocabulary	.79
Text comprehension	.74
Decoding	.71
Word recognition	.70
Sentence understanding	.70
Phonics skills	.67
Reading study skills	.61
Use of background knowledge	.51
Amount of reading	.51
Literary appreciation	.47

Table 14

Two Factor Analysis of Assessment Focus

Variable	Factor (Percentage of Variance accounted for)	
	NarOb (42.06%)	BdSub (14.9%)
Word recognition	.83	.15
Vocabulary	.80	.04
Decoding	.77	.10
Phonic skills	.73	.08
Text comprehension ^a	.66	.34
Sentence understanding ^a	.57	.43
Reading study skills ^a	.53	.33
Use of background knowl- edge	.10	.83
Literary appreciation	.06	.83
Amount of reading	.23	.61

Note. NarOb=Narrow and Objective; BdSub=Broad and Subjective

^aSignificantly loading items on both factors were factor-analyzed following the same exploratory procedures used for the first-order analysis. Means and standard deviations of each first-order factor are tabulated in Appendix S.

Table 15

Summary of First-Order Factors of Reading Instruction

Aspect of Reading Instruction^a	Factor 1	Factor 2
Reading Activities	Interactive Strategic (InterStr)	Basal-controlled (BasCon)
Instructional Strategies	Direct Instruction (DirIn)	Implicit Support (ImSup)
Views of Reading Instruction	Systematic Program (SysPro)	Holistic Immersion (HolIm)
Assessment Methods	Open and Contextual (OpCont)	Closed and Constrained (ClCon)
Assessment Focus	Narrow, Objective (NarOb)	Broad, Subjective (BdSub)

^a_n = 154

As with the first-order factor analyses, a two-factor orthogonal solution was optimal in identifying second-order factors. The two factors of Instructional Practice were named Strategic Whole Language and Programmatic Skills. Table 16 presents the constituent variables of each second-order factor and their factor loadings.

Variables with the strongest loadings on each factor pointed to their underlying meaning while other variables appeared to support and extend the primary meanings. Thus the Strategic Whole Language factor indicated a primary emphasis on student engagement in higher level comprehension strategies within a context supportive of student-centered authentic communication. Additionally, the Strategic Whole Language factor also appeared to be characterized by a top-down view of the reading process (BrdSub), a student-centered, literature-based curriculum (OpCont and Hollm), a holistic curriculum (InterStr and Hollm), teacher knowledge of reading instruction (OpCont), and teacher as facilitator (ImSup).

In contrast, the Programmatic Skills factor was most influenced by variables indicating instructional practice based on a focus in assessment on discrete skills (NarOb), direct instruction (DirIn), and reliance on basal exercises and formal tests as methods of assessment (ClCon). Other variables in this factor supported student involvement in discrete skill activities (BasCon) and belief in the use of scope and sequence materials and teacher control of students' skill mastery (SysPro).

Relative loadings of several variables were noteworthy. Although Direct Instruction (DirIn) loaded strongly on Programmatic Skills, it also loaded moderately on the Strategic Whole Language factor. Two (moderately) significant negatively loading variables on Strategic Whole Language were Closed and Constrained Methods of Assessment (ClCon) and Systemmatic Program Views of Reading Instruction (SysPro). Finally, Open and Contextual Methods of Assessment (OpCont) also had moderate significant loadings on Programmatic Skills.

Correlations Among Variables Used in Second-Order Factor Analysis

A multi-trait multi-domain table is a commonly used heuristic device used to detect convergent and discriminant evidence of intercorrelations among variables. Pearson correlations were computed on the first-order factors constituting each second-order factor and a multi-trait multi-method table produced to assess validity of the second-order factors. Table 17 displays intercorrelations among the variables of each

Table 16

Results of 2nd Order Factor Analysis

Variable	Factor	
	(Percentage of Variance accounted for)	
	StrWL (30.8%)	ProSk (22.5%)
Interactive Strategic Reading Activities (InterStr)	.79	.08
Broad and Subjective Assessment Focus (BdSub)	.71	-.03
Open and Contextual Assessment Methods (OpCont) ^a	.71	.37
Holistic Immersion Views of Reading Instruction (HolIm)	.69	.07
Implicit Instruction (ImSup)	.65	-.18
Narrow Objective Assessment Focus (NarOb)	.15	.69
Direct Instruction (DirIn) ^a	.39	.68
Closed and Constrained Assessment Methods (ClCon) ^a	-.36	.67
Systematic Program View of Reading Instruction (HolIm) ^a	-.30	.64
Basal-controlled Reading Activities (BasCon)	.16	.62

^aSignificantly loading variable on both factors

Note: StrWL = Strategic Whole Language; ProSk = Programmatic Skills

Table 17

Intercorrelations Among Variables Used in 2nd Order Factor Analysis

Aspect of reading instruction	Strategic Whole Language					Programmatic Skills					
	InterStr	BdSub	OpCont	Hollm	ImSup	BasCon	NarOb	ClCon	SysPro	DirIn	
	1	InterStr	100								
	FOSC2	48	100								
	OpCont	54	48	100							
	Hollm	42	43	37	100						
	ImSup	35	29	31	44	100					
2	BasCon	0	3	27	18	15	100				
	NarOb	15	0	39	-11	04	27	100			
	ClCon	-17	-16	0	-18	-30	22	33	100		
	SysPro	-18	-13	0	0	-25	28	27	40	100	
	DirIn	47	20	41	24	0	44	41	24	20	100

Note. Correlations are rounded to 2 significant figures and decimal points omitted.

A = Quadrant A as referred to in text

B = Quadrant B as referred to in text

second-order factor and cross-correlations between the second-order factors.

For the variables of the Strategic Whole Language factor, intercorrelations ranged from a low of 29 to a high of 54, with a median of 42.5. For Programmatic Skills, correlations among variables ranged from a low of 20 to a high of 44, with a median of 27.5. Although intercorrelations among the first-order variables were higher for the Strategic Whole Language factor than for the Programmatic Skills factor, they were both at acceptable levels to insure validity of second-order factors.

In terms of the cross-correlations between the constituent variables of each factor, values in one quadrant (A) ranged from -30 to 39 with a median of .10; and in the other quadrant (B), values ranged from -18 to 47 with a median of 7.5. Some relatively high cross-correlations can be explained. Open and Contextual Methods of Assessment (OpCont) correlated fairly highly with two variables of the Programmatic Skills factor—Basal-Controlled Reading Activities (BasCon) and Narrow and Objective Focus of Assessment (NarOb). This relationship seems to reflect the existence of several common variables in both first-order factors of Assessment Methods suggesting divergent interpretations of the same practices. Similarly, the relatively high correlations between Direct Instruction Strategies (DirIn) and two variables of the Strategic Whole Language factor -Interactive Strategic Reading Activities (InterStr) and Open and Contextual Methods of Assessment (OpCont)-can also be explained by the possibility of alternative interpretations of the same practice. Specifically, in the context of the InterStr factor, DirIn may be based on cognitive assumptions of teaching and learning, whereas in the context of the Programmatic Skills factor, its meaning would likely be based on behaviorist assumptions.

Research Question Two

Given derived reading instruction factors, what profiles can be developed to identify different homogeneous clusters of teachers?

Factor scores were generated for individual teachers on constituent variables of the two second-order factors—Strategic Whole Language and Programmatic Skills. Factor scores were then transformed into standardized scores (z-scores). These individual z-scores were the basis of computations used to identify groups of teachers. Results of three, four, five, and six cluster analyses were examined, and the four-group

This question focused on two sets of student reading variables: Student Reading Experience and Student Reading Achievement. Refer to Tables 7 and 8 in Chapter IV for detailed information about the composition of these variables. Means and standard deviations of the two sets of student variables used in correlational analyses of teacher groups are displayed in Appendix U.

Results of correlational analyses of teacher groups on student reading variables are reported below in two parts: one pertaining to Student Reading Experience and the other to Student Reading Achievement. Both types of variables were aggregated at the class level for correlational analysis. A solution selected based on evenness of member distribution and meaningfulness of number of groups relative to number of cases. Results of the cluster analysis are summarized in Table 18.

Individual group means were computed for each second-order factor variable then used to construct comparative group profiles on both second-order factors. Each teacher group was then named based on an examination of profiles within and between groups on each second-order factor. The four teacher groups were named as follows: Eclectic (Group 1), Basalized Whole Language (Group 2), Conservative Whole Language (Group 3), and Uncategorized (Group 4). Tables 19 and 20, and Figure 2 lists the steps taken to gain information about the four groups of teachers identified in the cluster analysis. Table 19 tabulates individual group means for each of the second-order-factor variables, Figure 2 displays group profiles based on these values, and Table 20 summarizes between-group profile patterns across each second-order factor.

A comparison of group profiles on the Strategic Whole Language factor revealed that three variables accounted for the greatest range of differences—Interactive Strategic Reading Activities (InterStr), Broad and Subjective Assessment Focus (BdSub), and Open and Contextual Assessment Method (OpCont). Interactive Strategic Reading Activities was the variable which most differentiated all groups. Two groups (Eclectic and Basalized Whole Language) were similar on Broad and Subjective Assessment Focus (BdSub), while the other two groups (Conservative Whole Language and Uncategorized) differed greatly on this variable. Three groups (Eclectic, Basalized Whole Language, and Conservative Whole Language) were similar on Open and Contextual Assessment Methods (OpCont). On Holistic Immersion Views of Reading Development (HolIm), teacher groups clustered in two main groups—Uncategorized and Eclectic in one cluster, and Basalized Whole Language and Conservative Whole Language in the other cluster. Finally,

Table 18

Summary of Cluster Analysis: Identifying Teacher Groups

Group	n of group	% of total in group
1	64	42
2	27	17
3	38	25
4	25	16
	<hr/> 154	<hr/> 100 ^a

^aTotals do not always equal 100 due to rounding errors.

Table 19

Mean Scores on 2nd-Order Factor Variables by Teacher Group

Factor	Eclectic (E) (n = 64)	Basalized Whole Language (BWL) (n = 27)	Conservative Whole Language (CWL) (n = 38)	Uncategorized (U) (n = 25)
Strategic Whole Lan-				
guage				
InterStr	-.37	.35	1.03	-.99
BrSub	-.22	-.30	1.02	-.68
OpCont	.03	.36	.62	-1.40
HolIm	-.37	.37	.63	-.40
ImSup	-.18	-.01	.49	-.27
Programmatic Skills				
NarOb	.09	.90	-.07	-1.11
DirIn	-.34	1.32	.32	-1.04
ClCon	.18	.93	-.60	-.56
SysPro	.22	.84	-.76	-.33
BasCon	-.08	.96	-.21	-.52

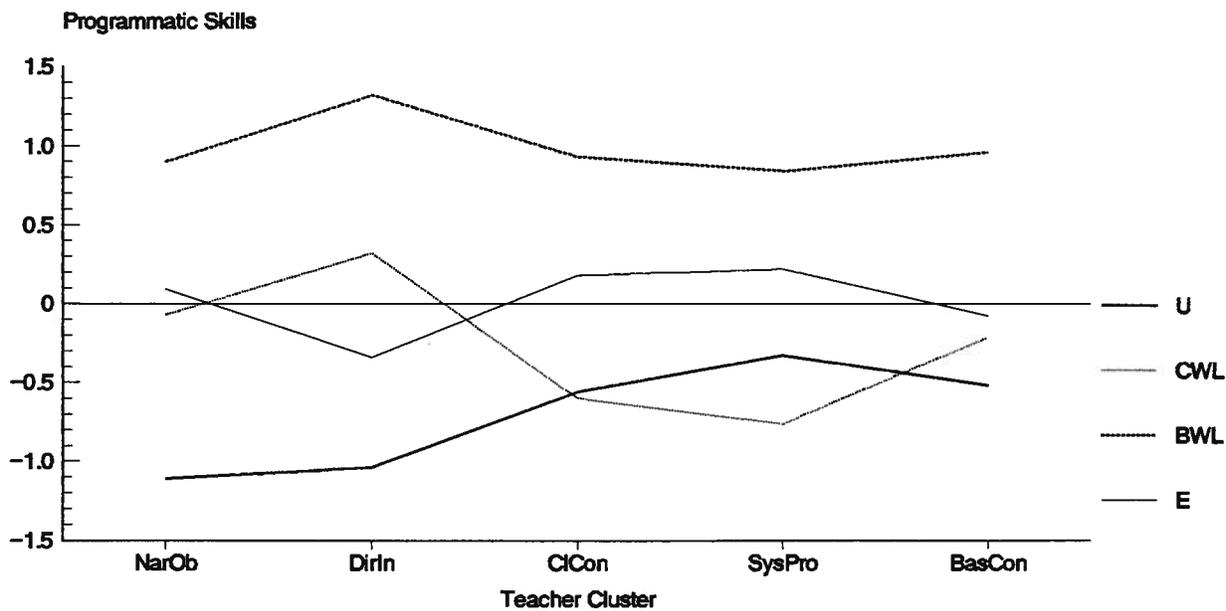
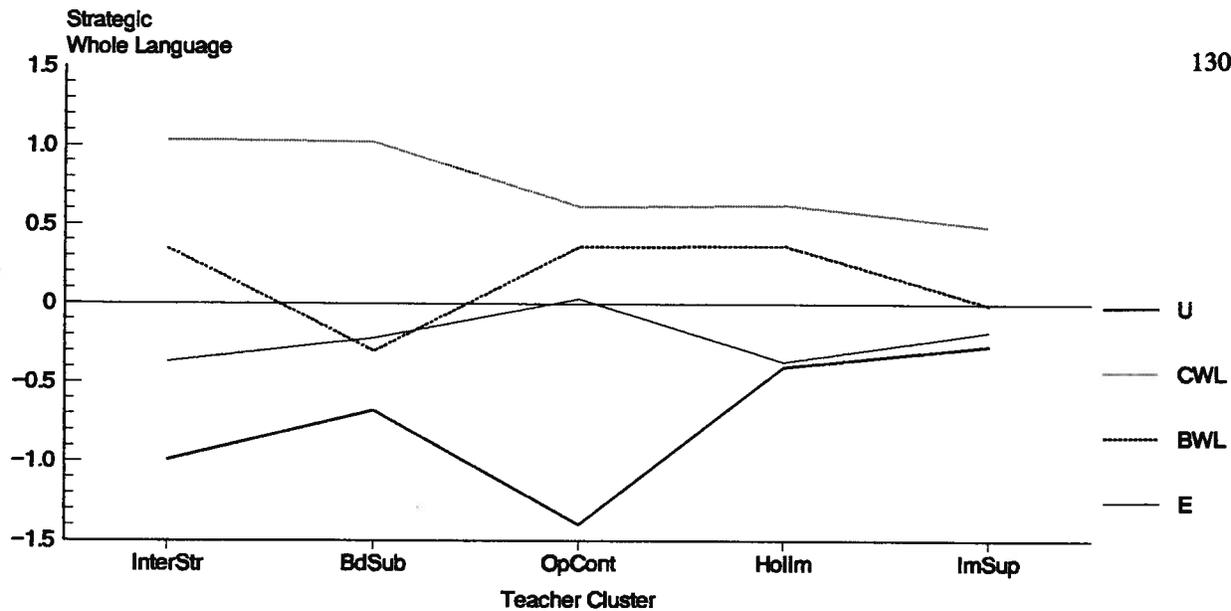


Figure 2. Teacher Profiles on Strategic Whole Language and Programmatic Skills.

- E** Eclectic
- BWL** Basalized Whole Language
- CWL** Conservative Whole Language
- U** Uncategorized

Table 20

Teacher Profiles on Second Order Factors of Instructional Practice

Group	Strategic Whole Language	Programmatic Skills
Eclectic (n = 64)	Average	Average
Basalized Whole Language (n = 27)	Average	High
Conservative Whole Language (n = 38)	High	Average
Uncategorized (n = 25)	Low	Low

there were minimal differences between all groups on Implicit Support Instructional Strategies (ImSup).

On the other factor, Programmatic Skills, the range of difference between groups was considerable on four of the five variables: Narrow and Objective Focus of Instruction (NarOb), Direct Instruction Instructional Strategies (DirIn), Closed and Constrained Assessment Methods (ClCon), and Systematic Program Views of Reading Instruction (SysPro). Three groups (Eclectic, Conservative Whole Language, and Uncategorized) were similar on Basal-controlled Reading Activities (BasCon). Variables which most differentiated all four groups were Direct Instruction Instructional Strategies and Systematic Program Views of Reading Instruction. Two groups (Eclectic and Conservative Whole Language) were similar on Narrow and Objective Assessment Focus, and two groups (Conservative Whole Language and Uncategorized) were nearly identical on Closed and Constrained Assessment Methods. Comparative profiles also revealed varying patterns of each group's profile across the two factors. The Eclectic group displayed average profiles across both factors. The Basalized Whole Language group displayed an average profile across Strategic Whole Language, and a high profile across Programmatic Skills. The Conservative Whole Language group displayed a high profile across Strategic Whole Language, and an average profile across Programmatic Skills. Finally, the Uncategorized group displayed low profiles across both factors.

Research Question Three

Given such differentiated clusters of teachers, what differences exist among these groups on measures of teacher characteristics and classroom conditions?

This question dealt broadly with an umbrella set of teacher background variables which are divided into two categories: Teacher Characteristics and Classroom Conditions. Detailed information about the constitution of these variables is available in Table 4 in Chapter IV. Means and standard deviations of each Teacher Characteristic and Classroom Condition variable are presented in Appendix T. No statistically significant differences among teacher groups were found on any of the Teacher Characteristic and Classroom Conditions variables. Results of all correlational analyses conducted on these measures are summarized in Table 21.

Table 21

Summary of Significant Tests of Differences among Teacher Groups: Teacher Characteristics and Classroom Conditions

Variable	F	df	p
Texts per student	.35	(3) 132	.79
ESL students	.22	(3) 132	.88
Principal engagement	1.47	(3) 137	.22
Professional reading	.21	(3) 129	.88
Casual reading	1.36	(3) 127	.26
Preservice training	.53	(3) 130	.66
Postsecondary education	.48	(3) 136	.70
Study of reading	.95	(3) 136	.42
Years teaching	.28	(3) 134	.84
Comprehension	.95	(3) 94	.42
Critical thinking	.89	(3) 95	.45
Enjoyment	2.30	(3) 80	.08

p < .05

Research Question Four

Given such differentiated clusters of teachers, what differences exist among these groups on measures of student reading experiences and reading achievement?

Student Reading Experience

Student Reading Experience variables consist of nine composite variables derived from the student background questionnaire. Teachers with seven or fewer students were not included for analysis because it was decided that fewer than seven students was insufficient representation of a teacher. Again, no statistically significant differences among teacher groups were found on any of the measures of Student Reading Experience. Table 22 summarizes results of Analyses of Variances of teacher groups on Student Reading Experience.

Student Achievement

Two types of preliminary analyses were performed on the student achievement test data: (a) reliability of test scores by domain; (b) means, standard deviations, and intercorrelations of each domain at the student level; and (c) means and standard deviations of each domain at the teacher group level. Following these analyses, one-way Analyses of Variance of teacher groups on measures of student reading proficiency were conducted. As with analyses of Student Reading Experience, teachers whose classes consisted of seven or fewer students were eliminated from analyses of teacher groups on Student Reading Achievement.

Reliability of Student Achievement Measures

Reliability analysis of the four reading achievement domains was performed using Cronbach's Alpha Measure of Internal Consistency. Table 23 tabulates the means and reliability of each measure of student

Table 22

Summary of Significant Tests of Differences among Teacher Groups: Student Reading Experience

Variable	F	df	p
School reading	2.64	(3) 137	.06
High cognitive perception of reading acquisition	1.27	(3) 126	.29
Reading interactions out-of-school	1.17	(3) 137	.32
Affective perception of reading acquisition	.85	(3) 126	.47
Homework intensity	.70	(3) 136	.55
Low cognitive perception of reading acquisition	.34	(3) 126	.79
Self-rating	.23	(3) 137	.88
Voluntary reading	.16	(3) 137	.92

p < .05

Table 23

Means and Reliability Coefficients of Student Achievement

Domain	No. of Items	Raw Score Mean	Alpha
Narrative	20	12.94	.84
Expository	19	11.77	.81
Document	21	13.93	.77
Word Recognition	40	33.51	.95

 $p < .05$

reading proficiency used in correlational analysis of teacher groups. Since all alphas were close to .80 or above, results of further analyses based on the student achievement test data could be assumed reliable.

Means, Standard Deviations, and Intercorrelations of each Domain

As described in the methodology chapter, raw scores for the domains of narrative comprehension, expository comprehension, and document search were transformed into the same standardized Elley scores used in the international analysis (mean=500, SD=100). Word recognition was analyzed as raw scores as items in this domain were not transformed into standard scores previously. Additionally, intercorrelations between all four domains were examined using Pearson correlations. Table 24 displays results of these basic statistics performed on the four reading achievement domains.

Mean scores were highest for narrative, lowest for document, while expository scores were in the middle. The same pattern was found for standard deviations for each domain, with the largest for narrative, smallest for document, and a middle range for expository. The three comprehension domains (Narrative, Expository, and Document) were highly correlated while correlations between word recognition and comprehension domains were lower. The correlation patterns indicate relationships between the reading processes used in Narrative, Expository, and Document texts, as well as the discrete skill of word recognition in comparison.

Correlational Analyses

Analysis of Variance was performed on each measure of reading achievement. Means and standard deviations of each measure at the teacher level are reported in Table 25. No statistically significant differences among teacher groups were found on any of the measures of Student Reading Achievement. Results of the four analyses of teacher groups by reading achievement domain are summarized in Table 26.

In order to investigate the effects of instruction on student reading proficiency further, Pearson correlations between reading domains and first-order instructional factors were carried out as had been done in the international analysis (Lundberg & Linnakyla, 1993; Postlethwaite & Ross, 1992). Table 27 displays results of this correlational analysis.

Table 24

Means, Standard Deviations, and Intercorrelations of Student Achievement Domains: Student Level

Domain	M	SD	Correlations			
			Narr	Expos	Doc	Word
Narrative	508.34	89.87	1.00			
Expository	505.14	87.67	.69	1.00		
Document	503.72	81.90	.59	.55	1.00	
Word Recognition	33.51	8.14	.27	.34	.28	1.00

Note. n = 2533. All scores are international standard Elley scores, except for Word Recognition which remains as raw scores.

Table 25

Means and Standard Deviations of Student Achievement Domains: Teacher Level

Measure	Mean	Standard Deviation
Narrative	507.90	32.42
Expository	504.38	33.05
Document	503.01	31.07
Word Recognition	33.63	3.89

Table 26

Summary of Significant Tests of Differences among Teacher Groups: Student Achievement Variables

Variable	F	df	p
Expository	1.96	(3) 134	.12
Document	1.37	(3) 134	.25
Narrative	.68	(3) 134	.56
Word Recognition	.04	(3) 134	.98

p < .05

Table 27

Intercorrelations Between 1st Order Factors and Student Reading Domain Scores

First Order Fac- tors	NARR	EXPO	DOC	WORD
InterStr	.10	.06	.03	.10
BasCon	.04	.02	.06	.06
DirIn	.09	.05	.08	.03
ImSup	.02	-.05	-.02	.02
SysPro	-.04	-.05	-.07	.02
HolIm	.07	-.11	-.30	.05
OpCont	.13	.04	.08	.07
ClCon	.03	.06	.14	-.03
NarOb	.14	.03	.09	-.02
BdSub	.08	.03	.01	.13

Note. NARR = Narrative; EXPO = Expository; DOC = Documentary; WORD = Word Recognition

Correlations were all low to very low ranging from a high of .14 to a low of -.30. This additional analysis increased validity of the findings from the correlational analyses of teacher clusters on Reading Achievement domains reported above.

Chapter Summary and Preview

This chapter has presented results of the study. The results of the factor analysis of each Aspect of Reading Instruction were described as well as the results of the second-order factor analysis. Ten first-order factors were found, two for each Aspect of Reading Instruction. Two second-order factors of teachers' Instructional Practice representing either a general focus on skills or meaning were derived from the first-order factors. The results of the cluster analysis were discussed in terms of the profiles representing each of the four identified groups of teachers. No one teacher group displayed extreme profiles on either second-order factor. Results of several categories of correlational analyses of the identified teacher groups were reported. No significant differences between teacher groups were found on any Teacher Characteristic, Classroom Condition, Student Reading Experience, and Student Reading Achievement variables. Chapter VI interprets the results in context of the literature on reading and teaching. Chapter VII summarizes the purpose and methods of inquiry of this study, as well as offers conclusions and implications for further research.

CHAPTER VI: DISCUSSION

The purpose of this study is to identify factors of reading instruction in Canada (BC), to describe groups of teachers based on those factors, and to examine other teacher and student variables of the teacher groups. This chapter extends the reports of findings in the previous chapter through interpretative discussion. Discussion and implications of the findings will proceed in the order of the four research questions. Thus topics of discussion in this chapter are: (a) factors of reading instruction in Canada (BC), (b) teachers' instructional profiles, (c) differentiation of teacher groups in terms of teacher characteristics and classroom conditions, and (d) differentiation of teacher groups in terms of their students' reading experiences and reading achievement.

Research Question One

What reading instruction factors underlie teachers' responses to questionnaire items regarding their instructional practice?

This phase of the study set out to construct a description of reading instruction in British Columbia through first- and second-order factor analysis. Two factors for each of five aspects of reading instruction addressed in the teacher questionnaire were identified (see Table 15 in Chapter V for names of these factors). Each pair of factors indicated a skills-based or meaning-based interpretation of the five Aspects of Reading Instruction. Second-order factor analysis was then conducted on the ten first-order factors in order to provide a multidimensional representation of teachers' instructional practice. Two factors were identified in this analysis—Strategic Whole Language and Programmatic Skills (refer to Table 16 in Chapter V for details of second-order factor results).

The decision to regard the two-factor solution as optimal for both the first- and second-order analysis can be partly explained by the nature of the questionnaire items. Many of the items related to instruction

were constructed to differentiate between two dominant approaches to reading instruction—skills-based and meaning-emphasis (Lundberg & Linnakyla, 1993). These items tend to represent extremist positions of the two opposing perspectives. The resultant factors reflected these differences to some degree at the multiple levels of analysis—i.e., within and across the five aspects of reading instruction, and in the overall factors of instructional practice. However, the differentiation was not a cut-and-dry view of traditional (skills-based) and holistic (meaning-emphasis) instruction.

Although a two-factor solution could appear to invite enforcement of a dichotomy found more in the literature than in the classroom (Lind, 1993; McCargar, 1994; Moorhead et al., 1994; Walmsley & Adams, 1993), this was not the case. Especially in the first-order analysis, constituent variables of each factor were not consistently reflective of skills-based or meaning-emphasis perspectives. Instead the meaning of several variables in each of the five sets of two factors was initially unclear. Careful study of the relative factor loadings along with a more holistic examination of the factor components facilitated meaningful interpretation.

The final identification of two factors of reading instruction factors-Strategic Whole Language and Programmatic Skills-represents many previous stages of analysis. The meaning of these two factors is dependent on the meanings of each of the ten first-order factors. In discussing the findings of the first research question then, I will begin by focusing on the first-order factors followed by discussion of the second-order factors.

First-Order Factors

Results of each factor analysis of the five Aspects of Reading Instruction are discussed in this section. Discussion of each of these results are organized in two main parts. The first part addresses distinguishing features of each factor. Categories of distinguishing features are (a) key concepts or main ideas emphasized, (b) evidence of suggestions of change or evolution within dominant perspectives of reading instruction, and (c) evidence of multiple interpretations of variables. The second part of each discussion of the first-order factor analysis explores relationships between assumptions about the broader reading curriculum which could be inferred from the factor's meaning and those of Traditional, Whole Language, and Strategic perspectives of reading instruction. The assumptions underlying these three major

perspectives in reading instruction were reviewed in Chapter II. (Refer to Table 1 in Chapter II for a summary of these assumptions).

Reading Activities: Interactive Strategic (InterStr) and Basal-Controlled (BasCon)

Please refer to Table 9 in Chapter V for the complete description of these factors.

Distinguishing features. The InterStr factor indicates that teachers insure their students are frequently engaged in using higher level comprehension strategies. Evidence of the importance of teachers' emphasis on students' comprehension development suggests the influence of current research in comprehension instruction in classroom reading instruction (Dole et al., 1991; Pearson et al., 1992). It is interesting to note how the primary activities in this factor contrast with those observed in the past. It wasn't that long ago when Durkin (1978-79) found that writing answers to comprehension questions (on worksheets) accounted for most of students' comprehension instruction time.

The InterStr factor also suggests that a secondary emphasis of students' reading activities is using language for authentic communication. Thus it appears that this factor represents a coming together of approaches sometimes considered antagonistic (Pearson, 1989). In other words, the InterStr factor seems to say that teachers should integrate natural language use and higher level processing strategies. An increasing number of researchers propose that such an integration will insure the evolution of Whole Language rather than risk an imminent demise (Pearson, 1989; Smith & Wham, 1994).

The BasCon factor seems to indicate that students are involved in two types of reading activities—working with isolated language skills, and participating in extension activities. The implied meaning of this factor is that teachers emphasize both types of activities thereby suggesting that teachers value the importance of extension activities for all students, not just the more capable ones as was the case in the past.

As reported in the results chapter, several variables loaded significantly on both factors of Reading Activities thus suggesting that the same activities can be diversely interpreted. For example, listening to students reading aloud can be an assessment activity (assessing fluency and accuracy) or a communicative activity (sharing a special book). Drawing in response to reading and diagramming story content can be explained as extension activities consonant with a skills-based curriculum, or alternatively, as integral

components of strategic or holistic approaches to reading instruction. These variable interpretations of single instructional practices lend support to the notion of the critical role of the teacher's theoretical perspective, or philosophy, in shaping practice (Altwerger et al., 1987; Edelsky et al., 1991).

Of particular interest in this issue of alternative interpretations is the strongest determinant of the BasCon factor—dramatizing stories. As with some variables of the InterStr factor, there appears to be different perspectives on this activity amongst teachers—as simply acting out a story with an entertainment focus, or as role drama with a constructivist, developmental focus. Since it is unlikely that the work with isolated language skills which characterizes this factor is underscored by constructivist views of language learning, dramatizing stories in the BasCon factor probably means acting out a story with an entertainment focus.

Classroom observations have found that teachers who are attempting to move towards holistic instruction can adopt such practices as above (i.e., drama, student story reading, text diagramming, and drawing) while still maintaining a skills-based curriculum (Scharer & Detwiler, 1992; Siera & Combs, 1990). Similarly, Whole Language teachers can use such traditional activities as silent, independent reading and journals, but embedded in a Whole Language framework (Edelsky et al., 1991). In sum, although there are some reading activities which are exclusively consistent with particular approaches, others are subject to interpretation.

The first section of Table 28 summarizes the important ideas, signs of evolution, and variables with multiple interpretations which are suggested in the two factors of Reading Activities—Interactive Strategic and Basal-Controlled.

Relationships of factor assumptions. Findings from this analysis indicate two distinct types of reading activities teachers should use in their classrooms: traditional discrete skill activities (BasCon), or strategic and holistic activities (InterStr). These contrasting types of reading activities suggest information about the encompassing curriculum—its substance and controlling agents. Specifically, it seems likely that

Table 28

Summary of First-Order Factors: Emphases, Indications of Perspective Evolution, and Variables with Multiple Interpretations

Aspect of reading instruction	Factor	Emphases	Suggestions of evolution in perspectives of reading instruction	Variables with multiple interpretation
Reading Activities	Interactive Strategic	Comprehension strategies	Integration of strategic reading and whole language	Reading aloud (communication vs. assessment)
	Basal-Controlled	Enrichment, vocabulary, comprehension skills, graphophonics	None	Drawing and diagramming (strategies vs. extension) Drama (role drama vs. extension)
Instructional Strategies	Direct Instruction	Ask questions; model	Shift from no comprehension instruction to active instruction	Ask questions to assess and deepen understanding, model, access prior knowledge, student verbalization of strategy (behaviorist vs. cognitive)
	Implicit Support	Encouragement	Shift from passive environmental to active support	None

(Table 28 continued)

Aspect of reading instruction	Factor	Emphases	Indications of evolution in perspectives of reading instruction	Variables with multiple interpretation
Views of reading instruction	Systematic Program	Hierarchically structured materials; Teacher as corrector;	None	Children should always understand what they read (objective/correct content vs. plausible, transactional interpretation)
	Holistic Immersion	Grouping/Standardized learner	Acknowledgement of accountability	None
Assessment Methods	Open and Contextual	Self-generated materials; daily home reading program; careful record-keeping. Rejection of hierarchical materials	Reliance on teacher knowledge of reading process	Listening to student read aloud (graphophonics vs. graphophonics plus other meaning-making strategies;
	Closed and Constrained	Authentic contexts; Records of student interests; Process measures	None	Oral question (correct content of text vs. individual interpretation)
Assessment Focus	Narrow and Objective	Formal written context; Product measures	Continuation of reading as a "bundle of skills"	None
	Broad and Subjective	Word recognition, vocabulary, decoding	None	None
		Background knowledge (cognitive); literary appreciation (aesthetic); amount of reading (affective)		

the BasCon factor would be associated with an overall curriculum content of hierarchically-ordered discrete skills dictated by basal materials and the teacher. These assumptions are most similar to those of Traditional reading instruction. The InterStr factor could likely indicate an overall curriculum content of comprehension strategies and authentic communication activities controlled by the teacher and students. These assumptions are most congruent with those of both Strategic Reading and Whole Language.

The first section of Table 29 summarizes the assumptions one could infer about the broader reading curriculum associated with the InterStr and BasCon factors.

Instructional Strategies: Direct Instruction (DirIn) and Implicit Support (ImSup)

Please refer to Table 10 in Chapter V for complete information about the constitution of these factors.

Distinguishing features. The DirIn factor suggests that teachers use active teaching strategies and focus instruction directly on specific texts. In contrast, the ImSup factor seems to say that teaching strategies is more environmentally-centered with the teacher facilitating students' positive attitudes towards reading.

At first glance, the DirIn factor could be interpreted as evidence of teachers' adoption of recommendations of current comprehension instruction research (Pearson et al., 1992). However, that interpretation assumes a sociocognitive or constructivist view of comprehension instruction (Pressely et al., 1992). The significant loading of graded materials on this factor makes it more probable that the instructional strategies stressed in this factor are aligned with behaviorist views of teaching and learning reading. That is, the DirIn factor probably represents strategies derived from earlier process-product research about effective reading instruction (Rosenshine, 1980; Rosenshine & Stevens, 1984), a view which in turn was embedded in a scope and sequence skills-based curriculum.

The ImSup factor seems to provide evidence of teachers' continued acceptance of the educational implications of child language development theory and natural reading development. Child language development research explains the adult's influence on a child's written language development in terms of provision of implicit and explicit strategies (Harste et al., 1984; Heath, 1982; Snow & Ninio, 1986; Wells, 1986). Implicit strategies are most important in the ImSup factor—i.e., encouraging parental involvement

Table 29

Summary of Assumptions of First-order Factors and Their Relationships to Assumptions of Traditional, Whole Language, and Strategic Reading Perspectives of Reading Instruction

Aspect of Reading Instruction	Assumption Focus	Assumptions	
		Factor 1	Factor 2
Reading Activities		Interactive strategic	Basal-controlled
	Substance	Comprehension strategies (SR)	Discrete skills (Tr)
	Control	Teacher and student (SR & WL)	Program/teacher (Tr)
Instructional Strategies		Direct Instruction	Implicit support
	Method	Teacher-centered(S-R) (Tr)	Student-centered (WL)
	Reading Development	Taught (Tr)	Caught (WL)
Views of Reading Instruction		Systematic program	Holistic immersion
	Role of teacher	Evaluator (Tr)	Facilitator (WL)
	Materials	Imposed, structured (Tr)	Derived, literature (WL)
	Meaning-making	Objective (Tr)	Generative, transactive (WL, SR)
Assessment Methods		Open and Authentic	Closed and constrained
	View of learner	Individual (WL, SR)	Normative (Tr)
	View of teacher	Professional (WL,SR)	Technician (Tr)
	Curriculum control	Student and teacher (WL, SR)	Program/Teacher (Tr)
Assessment Focus		Narrow and Objective	Broad and subjective
	Goal of curriculum	Skills mastery (Tr)	Individual development (WL)
	Reading process	Bottom-up (Tr)	Top-down (WL)

Note. Tr = Traditional; WL = Whole Language; SR = Strategic Reading

and encouraging the child's access and time with books. Educational implications of the role of implicit strategies are the ones most valued by Whole Language advocates and speak to the notion that "the child is already programmed to read" (Smith & Goodman, 1971, pp. 179-180). Explicit strategies (accessing prior knowledge and student description of comprehension strategy) are secondary but integral components of the ImSup factor. There is certainly a move in the literature towards endorsement of the use of more explicit instructional strategies in meaning-centered instruction (Adams, 1990; Anderson et al., 1985; Cazden, 1992). However, the fact that none of the defining instructional strategies of the Direct Instruction factor related even weakly to ImSup reinforces the interpretation that its predominant focus is on implicit strategies.

The second section of Table 28 summarizes the emphases, evidence of signs of evolution within perspectives, and variables with multiple interpretations indicated in the two factors of Instructional Strategies—Direct Instruction and Implicit Support.

Relationships of factor assumptions. Contrasting assumptions about methods of instruction as well as about the role of the teacher could be inferred from the above interpretation of the two factors of instructional strategies. The DirIn factor seems to reflect teacher-centered instruction directed towards students' mastery of scope and sequence curriculum. These assumptions represent those of Traditional reading instruction. Suppositions about instruction in the ImSup factor accord most closely with the Whole Language tenet of providing rich literacy environments from which natural development can optimally proceed.

Teachers' assumptions about reading instruction which could be inferred both from the DirIn and ImSup factors are summarized in the second section of Table 29.

Teacher Views of Reading Instruction: Systematic Program (SysPro) and Holistic Immersion (HolIm)

Please refer to Table 11 in Chapter V for a listing of the variables of these factors.

Distinguishing features. The SysPro factor appears to say that teachers believe students need to proceed in a lock-step fashion through structured reading programs with the teacher demanding accurate performance throughout. In contrast, the HolIm factor suggests that teachers believe they should support child-centered holistic language experiences both at home and school, provide students with opportunities

to engage in enjoyable reading experiences, and keep careful records of students' reading development. Additionally, the HolIm factor indicates that teachers value the use of children's trade books, but not graded reading materials.

Teachers' apparent value of highly structured reading materials in the SysPro factor suggests that teachers should favor a task-analytic approach to teaching reading and a scope and sequence order of instruction with skill mastery as the gatekeeper to progression. It appears that grouping for instruction in this factor is probably dictated by the program rather than individual need. The high demand for accuracy which marks this factor is consistent with other variables in the factor which indicate the need for teachers to constantly monitor and continuously assess students based on standard criteria. These are the hallmarks of effective reading instruction identified by earlier process-product research (Rosenshine & Stevens, 1984). The existence of this factor suggests the continuation of this legacy to some degree in Canada (BC).

The importance of assessment in the HolIm factor—as indicated by the variable about careful record-keeping—reflects a current development in the Whole Language literature. The rejection of formal and standardized assessment measures by Whole Language advocates along with increasing concern for accountability has stimulated a need to develop alternative forms and criteria of assessment (e.g., Valencia et al., 1994). The fact that careful record keeping is a strong determinant of this factor suggests that teachers are striving to integrate individual monitoring within student-centered, literature-based classrooms.

The one common variable between factors—the importance of children understanding what they read—can be variously interpreted in context of two different perspectives of reading instruction. That is, understanding from a skills-based perspective is a matter of "correct and accurate" interpretation whereas understanding from a holistic, child-centered perspective assumes a more subjective and plausible interpretation (Goodman, 1985; Pearson et al., 1992).

The main emphases, signs of perspective development, and variables with multiple interpretations which are implied in the SysPro and HolIm factors are summarized in the third section of Table 28.

Relationships of factor assumptions. The two factors of teachers' Views of Reading Instruction suggest contrasting assumptions about the role of the teacher, curricular materials, and the source and process of meaning. The SysPro factor seem to indicate beliefs in the key place of structured reading materials, an evaluative role of the teacher, correct interpretation of text, and a unidirectional process of

interpretation. These assumptions align most closely with Traditional reading instruction. Implied in the Holm factor are beliefs in the value of using literature, the facilitative role of the teacher, plausible interpretations of text, and a multidimensional process of interpretation. These assumptions most closely relate to those of Whole Language, and somewhat to those of Strategic Reading.

Assumptions about the role of the teacher, curricular materials, and the source and process of meaning inferred from interpretations of the two factors of Views of Reading Instruction are summarized in the third section of Table 29.

Assessment Methods: Open and Contextual (OpCont), and Closed and Constrained (ClCon)

For complete information about the variables of these factors, please refer to Table 12 in Chapter V.

Distinguishing features. The Open and Contextual factor appears to say that teachers base assessment of their students' reading abilities on behaviors observed in authentic contexts and knowledge of their students' interests. The Closed and Constrained factor implies that teachers rely on formal written contexts only. The types of assessment methods emphasized in each factor also suggest that teachers look either at reading processes (OpCont) or products (ClCon).

Unlike formal means of assessment, effective use of open methods is based on authentic indicators of reading development and relies on teachers' professional knowledge of reading development. The variables of the OpCont factor suggest the kinds of knowledge teachers should have. Specifically, listening to students read aloud requires knowledge about the graphophonic, lexical, and syntactic cueing systems. Holding discussions and interviews with students requires knowledge about comprehension, particularly students' use of higher order cueing systems and comprehension strategies. Finally, knowledge of students' interests acknowledges the motivational aspects of reading development. Evidence of the types of assessment methods represented in the Open and Contextual factor which teachers value suggests awareness of the most critical factor of instruction—"a deep and thorough understanding of the knowledge and processes involved in becoming literate" (Adams, 1991, p. 212).

Assessment methods common to both factors illustrate the importance of the role of perspective. For example, teachers can listen to students read aloud and ask oral questions for two quite different purposes.

Durkin (1978-79) found that the most common comprehension instruction strategies were assessing students' accurate recall of passage content and making use of practice exercises in workbooks. In a meaning-based perspective, oral questions are regarded as a way of scaffolding comprehension development (Pearson & Dole, 1987; Pearson et al., 1992).

Following the common axiom that assessment drives the curriculum (Resnick & Resnick, 1992), the apparent rejection of explicit student-centered variables (interviews and student interests) on the ClCon factor suggests the maintenance of a normative scope and sequence curriculum. In contrast, the implied support of student-centered assessment methods in the OpCont factor suggests the possibility of more authentic individual instruction than presumably provided in basal approaches, in terms of both materials and needs.

The third section of Table 28 summarizes the important ideas, evolving views in the field, and variables with multiple interpretations which are suggested in the two factors of Assessment Methods.

Relationships of factor assumptions. The two factors of Assessment Methods suggest teachers may hold distinct views of the learner, the teacher, and the agents of curriculum control. The OpCont factor appears to reflect views of the learner as an individual, the teacher as a professional, and the students and teacher as agent(s) of curricular control. These assumptions relate most to those of Whole Language and Strategic Reading. The ClCon factor seems to be associated with views of the learner as normative, the teacher as technician, and the teacher and/or program as agents of curricular control. These assumptions reflect those of Traditional reading instruction.

The fourth section of Table 29 summarizes teachers' assumptions about the learner, the teacher, and source of curriculum control which could be inferred from interpretations of the two factors of Assessment Methods—Open and Contextual and Closed and Constrained.

Assessment Focus: Narrow and Objective (NarOb), and Broad and Subjective (BdSub)

Please refer to Table 14 for identification of the constituent variables of these factors.

Distinguishing features. The one-factor solution (please refer to Table 13 in Chapter V for composition of this factor) of this aspect of reading instruction suggests that teachers use a wide spectrum of skills, strategies, and attitudes as criteria for assessment of their students' reading abilities. However,

word recognition and vocabulary are important criteria in both the one-factor solution and in the NarOb factor of the two-factor solution. It is widely recognized that word recognition and vocabulary are key factors of comprehension abilities (Anderson & Freebody, 1981; Davis, 1944, 1968). Additionally, some recent reading process research concludes that mastery of fluent word identification processes is requisite to comprehension processes (Velluntino, 1991). Other studies find that teachers of beginner readers in general emphasize small units of comprehension regardless of approach (Dahl & Freppon, 1995; Freppon, 1991; McCargar, 1994). Thus the emphasis on word recognition and vocabulary in grade three, traditionally the time for beginning comprehension instruction, suggests that teachers are continuing to ascribe importance to these components of early reading.

Findings from the two-factor solution indicate that teachers variously emphasize narrow (NarOb) and broad (BrSub) facets of reading. This interpretation reflects a key issue in the "great debate" literature. While one group of educators supports traditional measurable units as valid criteria of student learning (McKenna et al., 1990), another group values broader personal, social, and political outcomes of literacy instruction (Harste, 1994; Shannon, 1994).

Again based on the assumption that assessment drives the curriculum, the relative magnitude of the variables constituting the NarOb factor suggests that direction of instruction is from part to whole, with the most emphasis on smaller parts (word recognition and vocabulary). The significant influence of curriculum on students' concepts of reading is a current interest in reading research (Freebody et al., 1991; Hagerty et al., 1989; Mangano & Allen, 1986; Rasinski & deFord, 1985; Wing, 1991). It follows that some students may be forming concepts of reading as a "bundle of skills", thus reinforcing bottom-up models of reading. Some educators argue that assessment and curriculum focused on discrete skills is not an assessment of real reading (Edelsky et al., 1991). In contrast, the emphasis on the larger dimensions of reading in the BrSub factor suggests that teachers should use a reading curriculum focused more on the whole, and specifically on the cognitive, affective, and aesthetic factors of reading.

Important concepts along with indicators of current trends in the field which are suggested in the factors of Assessment Methods are summarized in the last section of Table 28.

Relationships of factor assumptions. The two factors of Assessment Focus appear to depict teachers' opposing curricular goals and views of the reading process. The NarOb factor seems to represent the goal

of skills mastery and the belief in a bottom-up view of reading. Both of these suppositions closely match assumptions of Traditional reading instruction. The BrSub factor seems to reflect the goal of individual development and the view of reading as a top-down process. Both of these assumptions correspond most with those of Whole Language.

The last section of Table 29 summarizes teachers' assumptions about curricular goals and views of the reading process which could be inferred from interpretations of the two factors of Assessment Focus.

Second-Order Factors

Although the discussion of first-order factor analyses illuminated distinctive features of each of the five Aspects of Reading Instruction identified in the teacher questionnaire, the resultant description of instruction remains limited to a segmented view of instruction. There is consensus in the literature both of teaching in general (Grossman, 1990; Shulman, 1986b), and reading instruction in particular (deFord, 1985; Harste & Burke, 1977; Kamil & Peterson, 1979) that teachers teach from an overarching framework rather than holding one perspective on assessment methods, another on instructional strategies, yet another on reading development, etc. In other words instruction is more realistically an integral whole, not a piecemeal collection of practices and beliefs. A second-order factor analysis of all ten factors of the five Aspects of Reading Instruction permitted a holistic, multidimensional view of the central constructs of reading instruction in Canada (BC).

Two factors of teachers' instructional practice in reading emerged from the second-order factor analysis: Strategic Whole Language and Programmatic Skills (Refer to Table 16 in Chapter V for detailed results of the second-order factor analysis.). The following discussion of results of the second-order factor analysis describes the constituent assumptions-or properties-of each factor and evaluates the integral composition of each factor in light of current divisions in the literature of reading instruction.

Strategic Whole Language

Collectively, the variables constituting the Strategic Whole Language factor seem to say that teachers practice the kind of holistic, meaning-centered instruction described in the Whole Language literature.

Additionally, the clear emphasis on comprehension strategies as evidenced in the primary loading of the InterStr variable implies that teachers particularly attend to the development of their students' higher level text processing abilities. Thus the Strategic Whole Language factor appears to reflect a trend amongst educators to encourage integration of holistic and strategic approaches to literacy instruction (Adams, 1990; Anderson et al., 1985; Cazden, 1992; Pearson, 1989).

It also appears that teachers regard a communicative view of language as integral to student strategy development. The Strategic Whole Language factor indicates that students read books to discuss them with their peers, their teacher, and their parents. Although the property of a communicative view of language derives largely from the influence of the InterStr variable, supportive evidence for the presence of this view is also found in two of its other variables: OpCont and ImSup.

Embedded in a communicative view of language are assumptions about authentic language use and meaningful texts (Altwerger et al. 1987, Froese, 1994a; Goodman, 1986a, 1989). In the Strategic Whole Language factor, it appears that teachers guide students toward books related to their individual interests as part of classroom assessment methods. This practice also acknowledges the role of intrinsic motivation in reading development. Students read more when they are interested thereby practicing more, gaining proficiency and confidence.

The emphasis on meaning in this factor is also the basis of language integration, another key tenet of Whole Language. Evidence from both the InterStr and HolIm variables indicates that teachers insure that their students are engaged in integrated language experiences in which they read and write their own as well as others' texts, listen to book discussions and storybooks read by the teacher, and represent their responses in drawing. The apparent favoring of student-centered learning in this factor suggests the importance of giving students more opportunity overall to influence both the learning content and processes in this factor, another feature of meaning-based approaches (Hiebert & Fisher, 1990).

The significant loadings of the variables ImSup and HolIm (HolIm) on this factor suggest that instruction is based on a naturalistic view of reading development. The use of implicit instructional strategies (ImSup) and the belief in child-centered holistic literacy experiences (HolIm) requires teachers' ongoing provision of engaging reading experiences. In this way, the role of the teacher appears to be facilitative in this factor. However, the role of the teacher does not seem limited to implicit support as

indicated by significant loading (.39) of DirIn on this factor. The apparent significance attributed to DirIn in addition to the stronger-loading variables representative of belief in naturalistic development (ImSup and HolIm) suggests this factor means that teachers use explicit strategy instruction while also providing rich environments for authentic literacy experiences.

Some inferences can be drawn from the above discussion about teachers' views of the reading process and about development of teachers' knowledge of reading development. The negative loadings of a group of variables on the HolIm first-order factor indicates teachers reject traditional scope and sequence curricula. Instead, as discussed above, the Strategic Whole Language factor represents the use of meaningful literature as a central component of the curriculum as well as the basis for individualized instruction, as implicated in the OpCon variable.

In the Strategic Whole Language factor, it appears the emphasis of instruction is on the large units of meaning in the cognitive, affective, and aesthetic domains (BdSub). Additionally, it seems teachers focus on all aspects of reading development but in the context of authentic literacy events. These features suggest a movement away from extremist top-down views of the reading process to a more balanced interactive focus. Finally, this factor seems to be saying teachers rely on their own knowledge of the reading process and reading development rather than following prescriptions based on student performance in workbooks.

Programmatic Skills

The factor that I have called Programmatic Skills appears to represent behaviorist notions of effective reading instruction and the continuation of scope and sequence approaches to reading instruction. Traditional reading instruction, which embodies these two concepts, has maintained its position in the classroom more as a culture of beliefs than as a body of research (Calfée & Drum, 1978). However, some current research appears to provide support for traditional practices by highlighting the foundational roles of phonics and word recognition in beginning reading, a point more relevant to early stages of formal instruction (e.g., see review in Vellentino). Other current research supports the use of direct instruction (e.g., Pearson & Dole, 1987; Pearson & Fielding, 1991). In other words, new conceptualizations of past practices and assumptions affect clear understanding of how teachers are teaching. The question remains

whether "current traditional reading instruction" is grounded in past beliefs or new knowledge of the reading process, reading development, and reading instruction.

The focus of instruction on easily codifiable skills of reading (NarOb), the strongest loading variable on Programmatic Skills, seems to support the presence of two primary assumptions of Traditional reading instruction: that reading is a linear process composed of discrete skills (Gough, 1972) and that the best way to learn such a complex activity is to master its constituent parts in a sequential, hierarchical order (Gray, 1919). Further indication of this perspective is found in the significant loading of the BasCon variable which emphasizes students' engagement in learning discrete skills. However, the BasCon variable also suggests that more prominence is given to extension activities than in the past as indicated by the significant loadings for dramatizing stories, playing reading games, and drawing in response to reading.

Not only does the Programmatic Skills factor suggest that teachers assume a task-analytic view of learning to read, but it also implies that teachers endorse a rigid scope and sequence curriculum structure as evidenced by the significant loading of the variable SysPro. Although SysPro is the fourth most influential variable, its significance in the Programmatic Skills factor suggests that teachers rely on carefully sequenced reading material. Closely related to this suggestion is the implication that instruction is structured around basal readers. Additionally, the indication that teachers use workbooks and formal tests as primary means of assessment (ClCon) also suggests the use of basal reading packages, as it is unlikely teachers would use such methods apart from inclusive basal programs.

The type of instruction reflected in this factor appears consistent with recommendations for effective reading instruction derived from behaviorist process-product research (Rosenshine & Stevens, 1984). Put simply, this factor implies that instruction is teacher-centered and systematic. More active instruction of comprehension skills seems to be valued as well although it appears that students' follow-up practice would be limited to exercises in workbooks.

Table 30 summarizes definitive characteristics of the two second-order factors.

Table 30

Summary of Central Qualities of Second Order Factors**Strategic whole language (Factor 1)**

Comprehension strategies

Student and teacher control of curriculum content and process

Communicative view of language

Individual development

Teacher knowledge

Language integration

Individualized learning

Programmatic skills (Factor 2)

Mastery of discrete skills

Task-analytic view of reading and reading instruction

Active, teacher-centered instruction

Program- and teacher-controlled curriculum

Imposed scope and sequence curricular structure

Decontextualized skill practice

Summary of Second-Order Factor Analysis

The final goal of the first research question was to identify factors of reading instruction in their simplest form. This was achieved by conducting first- then second-order factor analysis on items in the teacher questionnaire related to teachers' instructional practice.

Underlying dimensions of the two final factors of grade three reading instruction in Canada (BC) reflect issues and trends in the literature. The Programmatic Skills factor suggests that teacher-centered instruction continues (Cuban, 1984) along with beliefs in hierarchical skill mastery (Langer, 1984; Langer & Allington, 1992; Goodman et al., 1987; Dole et al., 1991). On the other hand, the suggestion of an integration of two holistic perspectives in the Strategic Whole Language factor—Strategic Reading and Whole Language—corresponds with proposals for literacy instruction based on various syntheses of different perspectives (Cazden, 1992; Langer, 1991; Speigel, 1992).

Research Question Two

Given derived reading instruction factors, what profiles can be developed to identify different homogeneous clusters of teachers?

Although a description of current reading instruction was derived through factor analysis, neither the proportion of teachers representing the factors nor the degree to which teachers adhere to the two factors was determined. Cluster analysis based on teachers' scores on the ten second-order factors was conducted to address these matters as well as other information of interest. Four groups of teachers were identified and named on the basis of their relative profiles on the Strategic Whole Language and Programmatic Skills factors. The group names are as follows: Eclectic (42% of teachers), Conservative Whole Language (25% of teachers), Basalized Whole Language (18% of teachers), and Uncategorized (16% of teachers). (Detailed findings from the cluster analysis are displayed in Tables 18, 19 and 20 as well as Figure 2 in Chapter V.)

Further insights gained from results of the cluster analysis will be discussed in three categories: (a) comparison of variables between groups (b) comparison of between-group patterns and (c) relationships of instructional profiles of teachers in B.C. to other research findings about reading instruction.

Comparing Variables Between Groups

Although the four groups of teachers differ to some degree on all ten variables, between-group differences are most pronounced on two variables—InterStr in Strategic Whole Language and DirIn in Programmatic Skills.

On the Strategic Whole Language factor, the Interactive Strategic variable accounted for the greatest differences between groups. One possible explanation of this finding is that research on comprehension strategies is a most recent development in the field of reading instruction and is therefore only beginning to influence classroom instruction. Attempts to explain the dramatic differences in emphasis on comprehension strategy instruction are limited by a decontextualized view of this variable. That is, the data does not permit speculation about the manner in which the students are using the strategies. The two groups which do not emphasize strategies—Uncategorized and Eclectic—could either be teaching traditional comprehension skills (i.e., sequencing events, finding main idea etc.) or simply ignoring higher level comprehension development. The two groups emphasizing comprehension strategies to some degree—Conservative Whole Language and Basalized Whole Language—could be framing instruction in either constructivist or behaviorist learning theory. Closer examination of each group's profile (discussed below) helps explain the differences.

A similar wide dispersion of differences between teacher groups exists for the DirIn variable. Two groups, or 58% of teachers (Uncategorized and Eclectic) tend not to use direct instruction and two groups, or 43% of teachers (Basalized Whole Language and Conservative Whole Language) use it to some degree. It is with the 43% who use direct instruction that understanding their perspective is critical. Direct instruction can be carried out within a behaviorist (Rosenshine, 1980) or a constructivist perspective, in which case it is termed "explicit strategy instruction" (Pearson & Dole, 1987). Analysis of the broader instructional context of this variable for each group helps explain whether teachers' use of DirIn is oriented to skills mastery or strategy development. This point will also be further discussed below.

Some interesting findings from comparisons of other group differences emerged. The fact that all groups except Conservative Whole Language, or 72% of teachers, do not exclusively emphasize a broad focus of assessment (BdSub) implies the existence of teachers' beliefs about their responsibility for teaching a range of reading dimensions at this grade level. Similarly 60% of the teachers (Eclectic and Conservative Whole Language) take a neutral stand on narrow focus of assessment (NarOb) suggesting that most teachers aim for a balanced reading curriculum. Taken together, teachers appear to hold an interactive view of reading with emphasis on the more measurable elements of reading. Eighty-four percent of teachers (all but Uncategorized) use authentic methods of assessment (OpCont) to some degree and only 16% absolutely reject them. The least differences between groups occurs with ImSup. This can be largely explained by the grade level—teachers of young children naturally provide encouragement of their students' development.

Comparing Between-Group Profile Patterns

The major finding from this analysis is that no one group of teachers is extremely representative of either perspective of reading instruction represented in the Strategic Whole Language or Programmatic Skills factors. Instead, all groups but the Uncategorized group represent various degrees and natures of eclecticism.

The largest group of teachers—Eclectic—has average profiles on both factors and is the most eclectic of all groups. Teachers in this group do not hold strongly to either a meaning-based or skills-based perspective but take a middle-of-the-road approach to reading instruction. Theirs appears to be a conservative eclecticism as evidenced by their lack of attention to activities involving comprehension strategies (InterStr).

The second group of teachers—Basalized Whole Language—represents a hybrid perspective. Here teachers seem to maintain a scope and sequence curriculum, usually in the form of basal reader programs as well as teacher-centered instruction. This group's high profile on Programmatic Skills demonstrates this characteristic. Teachers in this group may also use some literature and include comprehension strategies which are now part of basal reader programs. However, leaders in cognitively-based comprehension instruction caution against the use of basal-based comprehension instruction: "Even the most avant-garde

of the 1990's editions of basals reveal vestiges of a discrete-skills commitment (Pearson et al., 1992, p. 146).

The Conservative Whole Language teacher group has the highest profile on the Strategic Whole Language factor with a particularly strong emphasis on the InterStr and BrSub variables. This group's average profile on the Programmatic Skills factor suggests that they maintain a balanced focus of assessment (NarOb), and use Direct Instruction infrequently. Generally, this group eschews the use of basal materials (ClCon, SysPro) and student practice of discrete skills (BasCon). Teachers' infrequent use of direct instructional strategies may hinder students' optimal learning of the comprehension strategies they spend time doing as the literature is quite adamant that explicit instruction is necessary for learning these strategies (Dole et al., 1991; Pearson & Dole, 1987)

Finally, the Uncategorized group's low profiles on both factors indicates that these teachers are weak in both perspectives of reading instruction represented in the Strategic Whole Language and Programmatic Skills factors. Although they constitute the smallest number of teachers, it is a large enough group to invite investigation of what they actually do in the classroom.

Relationships of Instructional Profiles to the Literature

The fact that three of the four groups—or 84% of teachers—are clearly eclectic in their views and practices of reading instruction is consistent with other studies (Hosking, 1991; Lind, 1993; Maguire, 1989; McCargar, 1994; O'Flavahan & McConnell, 1990; Walmsley & Adams, 1993) as well as with pragmatic views of teaching (McKenna et al., 1994; Moorhead et al., 1994). Although some argue for purity of perspective (Edelsky et al., 1991; Goodman, 1989), it appears that exclusive conformity with one perspective—at least as defined in this study—is more of an ideal than a reality.

Finding that eclecticism is the norm raises questions about the validity of labelling certain school systems as adhering to one approach over others. British Columbia is known to be a active region of Whole Language programs (Fennell, 1993; McConaughy, 1988; Simner, 1993) yet findings from this study show quite another picture of reading instruction. In this study even the highest scoring group on the meaning-centered factor (Conservative Whole Language) had average scores on the basal, skills-based factor. This pattern of instructional eclecticism was consistent across all four groups of teachers. Earlier

findings from the IEA teacher data of teachers' self-reports about their instructional methods showed only 23% used Whole Language, while 56.6% reported using an eclectic approach (Froese, 1995). Keeping in mind Canada's and British Columbia's legacy of child-centered education, one may surmise that the nature of eclecticism in more conservative educational systems such as the United States (Shannon, 1989b) would reveal lower profiles across the Strategic Whole Language factor and average profiles across the Programmatic Skills factor.

The teacher change literature documents the conservative nature of teachers' evolution of literacy instruction (Courtland, 1992; Ray, Lee & Stansell, 1991; Richardson et al., 1991; Scharer, 1992). In British Columbia—where professional and grass-roots support for meaning-based perspectives of reading instruction are strongly in place—teachers have not abandoned basal materials, scope and sequence curricula, a focus on discrete skills, and teacher-centered instruction. Instead teachers appear to be using literature in various degrees of conjunction with basal programs and appear to be cautiously moving toward constructivist-based student-centered learning from behaviorist teacher-centered instruction. Finally, there is implicit evidence that teachers are developing professional knowledge about reading development and moving toward authentic individualized instruction.

What remains unknown are explanations of teachers' eclecticism. Current theory in the study of teaching supports an explanation of conscious choice (Shulman, 1986b). That is, teachers are believed to be intentionally serving their students' individual needs, each of which requires different activities and instructional strategies. Teachers fine-tune instruction to fit particular students and situations (Anderson, 1989; Lampert & Clark, 1990). Another explanation of eclecticism relates to the broader teacher and the educational situation. The effect of several teacher and student background variables on instructional practice will be discussed in the next section.

Summary of Instructional Profiles

Some of the second-order factor variables of reading instruction distinguish groups of teachers more than others. Two of these distinguishing variables, InterStr and DirIn, represent the most recent developments and areas of discussion in the literature. Implicated in the comparative scores of focus of assessment (NarOb and BdSub) is an interactive view of reading since teachers appear not to be focusing

exclusively on either narrow or broad dimensions of reading ability. Comparison of group profiles confirms that eclecticism is the norm in British Columbia as it seems to be elsewhere. However, this eclecticism is more conservative than liberal since no significant percentage of teachers showed a high profile on Strategic Whole Language and simultaneously, a low profile on Programmatic Skills. Finally, the validity of British Columbia's status as a "whole language province" is questioned. Although British Columbia is known as a whole language province, a more accurate picture is consistent with a trend to remain anchored in traditional perspectives while cautiously exploring new waters. Whether teachers' eclecticism is consciously decided or otherwise influenced cannot be discerned from data used in this study.

Research Question Three

Given such differentiated clusters of teachers, what differences exist among these groups on measures of teachers' characteristics and classroom conditions?

Analyses for this question were based on two groups of Teacher Background variables: one group of eight variables pertaining to Teacher Characteristics and one group of four variables related to Classroom Conditions. For both groups of variables no significant differences were found among teacher groups. Results of correlational analyses of teacher groups on Teacher Characteristics and Classroom Conditions are summarized in Table 21 in Chapter V.

Teacher Characteristics

Teacher Characteristic variables fall into three general groups: educational factors (Post-secondary Education, Preservice Training, Years of Teaching, Further Study of Reading, and Professional Reading, Casual Reading), instructional aims (Comprehension, Enjoyment, and Critical Thinking), and organizational matters (Grouping and Homework).

In terms of educational factors, studies have shown that experienced teachers tend to have more complex, multidimensional instructional practice than do novice teachers (Duffy, 1993; Kinzer, 1988; Richardson et al., 1991). Additionally, experienced teachers tend to be more successful in implementing new comprehension strategies (Gaskins et al., 1993). None of the teacher groups in this study were

characterized as exclusively representing one or the other perspective (Programmatic Skills or Strategic Whole Language). Based on the finding of no significant differences among groups on any of the educational variables, one could speculate that both novice and experienced teachers in British Columbia believe that grade three students need to develop a range of reading skills and attitudes, and that a variety of methods facilitates that development. The difference then between the novice and experienced teachers in this regard could be less in the belief per se than in its formation. Whereas the novice teachers draw from their own experiences in learning to read and from teacher training, experienced teachers also draw from years in the classroom.

Noteworthy is the pattern of nearly identical means and standard deviations of all three instructional aims across teacher groups. These aims are higher level aims, in contrast to such aims as decoding, vocabulary, and learning letter-sound relationships. This suggests the use of different means to similar ends as has been recently found in another re-analysis of the IEA Reading Literacy Study which compared instruction-achievement relationships between countries (Froese, 1995).

Since results of analyses of teacher groups by Teacher Characteristics as defined in this study showed no significant differences among groups, it is possible that other more discriminant variables exist which were not available for analysis. Given the multiple dimensions and the complexity of teaching, perhaps studies framed in qualitative designs would better detect meaningful teacher variables of instructional practice. Qualitative studies investigating teacher change are successfully revealing factors such as participation, collaboration, and ownership that at least in individual instances promote or inhibit change (e.g., Bruneau, 1992; Button, 1992; Freeman et al., 1993; Pace, 1992; Scharer & Detwiler, 1992).

Classroom Conditions

As with the Teacher Characteristic variables, no Classroom Condition variables were statistically significantly correlated with teacher groups.

Some types of Classroom Condition variables used in this study are believed to affect teachers' transition into new perspectives or methodologies—class size (Duffy & Roehler, 1986), amount of reading materials (McLean et al., 1993), staff and administrative support (Freeman et al., 1993,; Moss, 1990). However, my study did not measure change, but simply one moment in time—an interesting time,

however, in Canada (BC) in that a new provincial meaning-based curriculum was in initial stages of implementation. The fact that even the teacher group with the highest profile on the meaning-based factor was not affected by Classroom Conditions suggests that teachers could be affected by other classroom variables than those analyzed in this study.

Descriptive statistics about the number of ESL students per class in British Columbia were surprising in themselves. There are a growing number of districts in the Lower Mainland (Vancouver area) whose enrolment of ESL (English as a second language) students is over 50%. Based on the IEA province-wide sample however, only 25% of classrooms enroll three or more ESL students, while 42% reported enrolling none. The provincial mean was only 2.6. Given this distribution, it is possible that the number of ESL students would not have a significant effect on a provincial sample. It is possible that investigation of this variable restricted to Lower Mainland populations would reveal differences among teachers given the commonly-held assumption that "students who find learning to learn read difficult" (Allington, 1991) are best taught with traditional methods (Allington, 1983; Nespor, 1991).

Summary of Differences Among Teacher Groups on Measures of Teacher Background

The assumption that instructional practice is embedded in a personal, social, political, and educational milieu is commonly held by educators. The variables available in this study for discriminating teachers' instructional practice were perhaps too gross, sometimes in substance (e.g., Preservice Training) and sometimes in focus (e.g., Principal Engagement). With that caveat, one can only cautiously conclude from the findings either that a) teachers' instructional practice is independent of Teacher Characteristics and Classroom Conditions or, more plausibly, b) there are other personal and contextual variables of instructional practice, and, furthermore, those variables may be more clearly identified when investigated with other research designs.

Research Question Four

Given such differentiated clusters of teachers, what differences exist among these groups on measures of their students' reading experiences and reading achievement?

Discussion of results of correlational analyses of teacher groups on two types of student variables will be presented in two sections. The first section will discuss results of the Student Reading Experience variables, and the second will discuss results of the Student Achievement variables.

Student Reading Experiences

Analyses of teacher groups on all eight variables of students' reading experiences revealed no significant differences (see Table 22 for summary of results of these analyses).

It was unexpected that none of the Student Reading Experience variables correlated significantly with teacher groups. The eight variables can be regarded as affective and conceptual indicators of literacy development. There is ample current literature both demonstrating and hypothesizing relationships between teachers' perspectives and practices, and such affective and conceptual indicators of literacy development as students' concepts of and attitudes towards literacy (Dahl & Freppon, 1995; Hagerty et al., 1989; Freebody et al., 1991; Gambrell & Palmer, 1992; Morrow, 1992; Rasinki & deFord, 1988; Shapiro & Witte, 1990; Wing, 1991).

Again, it must be remembered that the four types of instructional practice identified in this study represented eclectic rather than pure versions of either perspective defined by the Strategic Whole Language and Programmatic Skills factors. Thus even the group with the most extreme meaning-based approach (Conservative Whole Language) also displayed an average orientation towards a traditional approach to instruction. In other words, perhaps contrasts between teachers' instructional approaches in this study were not bold enough to permit identification of conceptual and affective differences between instructional approaches documented in the literature.

One could speculate that findings from these analyses support research underscoring the sociocultural foundations of literacy development (Heath, 1982, 1983; Wells, 1986). This research shows that the most effective instruction is responsive to the literacy behaviors and skills students bring with them to school from their homes and communities (Hull & Rose, 1990). The assumption that instruction is limited to the achievement of normative skills—as is implied in this study—prevents consideration of other dimensions of the effects of instruction. Thus although teachers appear to constantly shape instruction in response to their students, (Anderson, 1989; Duffy & Roehler, 1986; Lampert & Clark, 1990), it is not always clear in the

literature what indicators of their students' strengths and needs are being considered. Once again, more finely tuned variables, preferably derived from close observations of small samples, might better detect student background effects on teachers' instructional practice.

Student Reading Achievement

Mean scores across teacher groups on the four reading domains revealed some interesting insights into differing levels of proficiency (see Table 25 in Chapter V for a display of this information). Narrative had the highest mean (508.34) and largest standard deviation (89.87). Inspection of comparative results of student achievement by domain across teacher groups could lead to speculation that students at this educational level have received most of their instruction based on narrative texts. Foundations of this interpretation come from a) long-held assumptions about the appropriateness of stories for beginning reading and b) recent research pointing to the supremacy of narrative as a cognitive resource for learning (Hardy, 1979; Rosen, 1987; Wells, 1986). It is interesting to note that mean narrative scores between groups had the least variance, while the range is greater in both expository and document.

It is only recently that attention has been drawn to the need to support students' literacy abilities with expository and document text to better reflect the "linguistic and cognitive processing of those written language forms required by society and/or valued by the individual." Whole language has long espoused the importance of merging borders between school reading and out-of-school reading in the name of "authentic literacy activities." The comparatively lower means across groups for expository (505.15) and document (503.72), along with the comparatively smaller standard deviations for both domains (87.69 and 81.90 respectively) could indicate the lesser amount of attention paid to these text types as well as their recent place of importance in the curriculum.

One could conjecture that results of Analyses of Variance of teacher groups on student achievement variables (see Table 26 in Chapter V for summary of these results) quell debate about the effectiveness of holistic approaches in the area of basic skills (McKenna et al., 1990; Edelsky, 1990). In other words, one could simplistically interpret the findings to indicate the effectiveness of a number of approaches of insuring students' acquisition of basic reading skills. There is evidence that all teachers of beginning reading emphasize basic skills to some degree (Dahl & Freppon, 1995; Freppon, 1991; McGargar, 1994).

A recent comparison of basal and child-centered, literature-based approaches based on IEA data of two countries, the United States and Canada (Froese, 1995) concluded that "similar achievement can be obtained by quite different educational curricula" (p. 183). However, other considerations related to the research instruments help illuminate findings from my study.

As has been mentioned in other chapters, validity of research instruments used in large-scale assessment studies are a major topic of debate and controversy. Both the IEA teacher questionnaire and student achievement test have been targets of such criticism. In my study, it is possible that the teacher questionnaire did not serve to differentiate instructional variables on the national level as well. Although it was designed to discriminate at multiple levels, a certain degree of grossness was inevitable if it was to serve at the international level. In countries like Canada where several forms of holistic instruction are promoted in literacy curricula, perhaps other findings would emerge from studies using instruments which discriminate either other aspects of instruction than the five focused on in this study, or more forms of holistic instruction.

The IEA student achievement test has been criticized despite improvements from earlier versions to better reflect the ". . . knowledge and skills required by a literate society and/or valued by the individual." Critics argue that the test reinforces a componential, rather than holistic view of reading by testing students in four separate domains (McLean, 1990). Additionally, according to critics, the test remains a limited reflection of the skills and knowledge valued by those who endorse meaning-based perspectives. Although the test covers a spectrum of basic skills, including inferencing, it does not cover the higher-level literate behaviors deemed more important by many researchers (Brown, 1991; Heath, 1991; Wells, 1990), nor such broader indicators of students' reading development as personal and world vision (Harste, 1994; Shannon, 1994). Furthermore, critics contend that the possibilities for students' meaningful engagement in text are curtailed by the predominant forms of test items. That is, they argue that words, sentences, and short passages are unlikely vehicles of students' engagement in contrast to substantial passages of meaningful text. A similar concern pertains to the predominant format of response (i.e., multiple choice, short answer) which critics argue does not permit any information about the student's literacy processes. Other researchers point to the superior validity of longitudinal data (Husen, 1978) and multiple measures in which the focus is not restricted to basic literacy (Hoffman, 1986).

While hypotheses about positive effects of meaning-based instruction on students' literacy development have been offered (Fisher & Hiebert, 1990; Goodman, 1986), few studies have provided convincing evidence (McKenna et al., 1990). However, some current studies now show the effectiveness of meaning-based instruction on student literacy development when multiple measures over time are used (Dahl & Freppon, 1995; Hagerty et al., 1989; Koch, 1993). Thus criteria and procedures of instructional evaluation are critical variables of findings from studies examining relationships of instruction to student reading development, including achievement.

In sum, although criticisms of instruments used in large scale assessment studies abound, a rejoinder must be offered acknowledging the complexities, both theoretical and practical, involved in carrying out international research. Findings from my study provide one description of reading instruction in one educational system, but reveal no significant differences for students' reading achievement. Findings from this analysis suggest three possibilities: (a) that several instructional approaches can facilitate students' basic literacy achievement, (b) that more precise measures of instructional practice are needed in less than international levels of analysis, and (c) that there are other variables of student achievement and other ways to assess effects of instruction.

Chapter Summary and Preview

This chapter discussed the meaning of the statistical findings reported in the previous chapter in order of the research questions. The ten first-order factors were discussed in terms of their distinctive properties and their underlying assumptions as related to Traditional, Whole Language, and Strategic perspectives of reading instruction. Similarly, interpretative discussion of the two second-order factors highlighted their key assumptions. Teacher groups identified by cluster analysis were further described in terms of between-group differences on individual variables as well as between-group differences across each second-order factor. Finally, speculations about the findings of no significant differences between teacher groups on Teacher Characteristic, Classroom Conditions, Student Reading Experience, and Student Achievement were offered.

Chapter VII summarizes major findings of each research question, draws conclusions from across research questions, and suggests directions for further research.

CHAPTER VII: SUMMARY, LIMITATIONS, CONCLUSIONS, IMPLICATIONS

This chapter presents a summary of the study, its limitations, the conclusions, and implications. The summary reviews the purpose of the study, the background, the methodology, and major findings from each research question. Limitations pertaining to the interpretation of the findings are discussed in terms of validity of the research instruments and the population represented in the data. Conclusions are drawn based on the findings within and across research questions. Finally, implications dealing with curriculum development, curriculum assessment, and teacher development as well as directions for future research are described.

Summary of the Study

This section summarizes the study in light of its purpose, its background, the methodology, and major findings of each research question.

Purpose of the Study

At the broadest level, the purpose of this study was to construct a description of grade three reading instruction in Canada (BC) and to identify teacher and student variables of instruction. To accomplish this general purpose, three specific purposes were formulated: to identify factors underlying grade three reading instruction, to identify and describe homogeneous groups of teachers based on these factors, and to investigate differences between teacher groups in terms of teacher background, student background, and student achievement. As a secondary analysis the purposes of this study were determined in context of the teacher and student data of the 1991 International Association for the Evaluation of Educational Achievement Reading Literacy Study.

Background to the Study

This study was undertaken for two main reasons. The first was a general interest in studying classroom reading instruction in light of shifting assumptions about literacy in the literature. The second reason was as a response to international findings of no significant effects of instruction on student achievement.

Discussions of paradigm shifts in literacy and literacy education are becoming more frequent and more intense (Brown, 1991; Dillon, 1994; Froese, 1990; Langer, 1991; Lloyd-Jones & Lunsford, 1989; Weaver, 1994; Willinsky, 1990). These shifts are embedded in the larger contexts of constructivist assumptions about learning and teaching derived primarily from the work of Vygotsky (1962, 1978), evolving views of literacy (Heath, 1991; Resnick & Resnick, 1977; Wells, 1990) and new insights into literacy development (Harste, Woodward, & Burke, 1984; Heath, 1982, 1983; Wells, 1986).

Interest in how teachers are responding to these changing assumptions is one focus of current reading instruction research. A pervasive view is that classroom instruction continues to be shaped by past behaviorist beliefs about teaching in general and skills-based, scope and sequence reading instruction in particular, thus lagging behind instructional approaches reflective of current theory (Goodman et al., 1987; Langer & Allington, 1992). Another view of teaching places the teacher in control of whatever instructional approach they use by virtue of the knowledge they possess about both the subject area and pedagogy (Leinhardt, 1988; Shulman, 1986b, 1987). In this study, teachers' knowledge is referred to as personal professional knowledge of reading instruction.

Teachers' knowledge underlying their instructional practice of reading is more typically eclectic than reflective of any one approach (Lind, 1993; Maguire, 1989; McCargar, 1994; Pressley & Rankin, 1993; O'Flavahan & McConnell, 1990; Scott & Butler, 1994; Walmsley & Adams, 1993; Warren et al., 1993). Although some educators reject the value of eclecticism (Edelsky et al., 1991; Goodman, 1989), others view it positively and as an indication of teachers' "ability to deal with the incompleteness of any given theory and . . . combine theories to construct meaningful interpretations that guide practice" (Moorman et al., 1994, p. 319). This study then contributes to the literature of reading instruction by examining their instructional practice and some of the factors which affect how they teach.

Of interest in any study of instructional practice are relationships between instruction and student development. This was also a primary focus of the IEA Reading Literacy Study. At the international level, no significant effects of a variety of instructional practices on student reading achievement were found. The IEA proposed that national studies of instruction-achievement relationships could be more revealing. This secondary analysis also addressed that proposal.

In sum, this study was shaped both by the current focus of reading instruction research on relationships between theory and practice and the suggestion from the IEA for national analyses of instructional effects on student achievement. The following research questions were formulated and answered based on the data available from the teacher questionnaire, student questionnaire, and student achievement test:

1. What reading instruction factors underlie teachers' responses to questionnaire items regarding their instructional practice?
2. Given derived reading instruction factors, what profiles can be developed to identify different homogeneous clusters of teachers?
3. Given such differentiated clusters of teachers, what differences exist among these groups on measures of teachers' characteristics and classroom conditions?
4. Given such differentiated clusters of teachers, what differences exist among these groups on measures of their students' reading experiences and reading achievement?

Methodology

A correlational research design was used to identify factors of reading instruction in British Columbia and to differentiate homogenous groups of teachers based on these factors and to differentiate teacher groups on several teacher and student variables. Analysis was planned in two stages, exploratory followed by confirmatory. Five aspects of reading instruction were defined from the available teacher data. Exploratory factor analysis was performed on each of the five aspects followed by second-order factor analysis. Factors were interpreted in the context of Traditional, Whole Language, and Strategic perspectives of reading instruction. Cluster analysis based on individual teachers' scores on second-order

factor variables was then conducted and homogeneous groups of teachers identified and described. Analyses of variance and chi-squares were then employed to examine differences among teacher groups on teacher characteristic, classroom condition, student reading experience, and student achievement variables.

Major Findings

This section restates the most important findings from analyses of each research question.

Research Question One

What reading instruction factors underlie teachers' responses to questionnaire items regarding their instructional practice?

Findings based on teachers' responses must take into account that teachers may have reported what they thought the researchers wanted to hear. Consequently, findings about the underlying factors of reading instruction are constrained by validity of the data.

Principal components analysis identified two factors for each of the five Aspects of Reading Instruction and two second-order factors of Instructional Practice. The factors of each Aspect of Reading Instruction and the second-order factors are briefly described below.

The two factors of Reading Activities were called Interactive Strategic and Basal-Controlled. The Interactive Strategic factor indicated that comprehension strategies and a variety of student-centered literacy events are important kinds of activities for students to be involved in. The Basal-Controlled factor implied that important reading activities are those which focus on discrete units of language as well as those which extend language use such as drama and reading games.

Direct Instruction and Implicit Support were named as the two factors of Instructional Strategies. The Direct Instruction factor implied that teacher-centered comprehension instruction are optimal instructional strategies. In contrast, the Implicit Support factor appeared to say that child-centered and indirect instructional strategies, especially encouragement are preferable.

The two factors of Views of Reading Development were labelled Systematic Program and Holistic Immersion. Beliefs the validity of hierarchially structured materials, student accountability for skills

mastery, and ability grouping seemed to best depict the meaning of the Systematic Program factor. Assumptions about the best ways to teach children to read in the Holistic Immersion factor seemed to be those which focus on child-centered language experiences, frequent opportunities to read for enjoyment, and parental involvement in the child's reading activities.

Factors of Assessment Methods were named Open and Contextual, and Closed and Constrained. The Open and Contextual factor indicated the importance of teachers' observations of literacy events and attention to students' interests. The Closed and Constrained factor pointed to a reliance on workbooks and formal tests thereby implying more attention to reading products than processes.

Narrow and Objective, and Broad and Subjective best described the two factors of Assessment Focus. The Narrow and Objective factor suggested that the smaller, more measurable units of language as most important while the Broad and Subjective factor seemed to say that students' use of larger, less easily codified components of comprehension are preferred assessment criteria.

Two second-order factors of Instructional Practice were identified based on analysis of the ten first-order factors. The second-order factors were labelled Strategic Whole Language and Programmatic Skills. The Strategic Whole Language factor indicated that reading instruction should emphasize comprehension strategies, student-centered learning, and teacher knowledge to guide instruction. The most important implication derived from an examination of the properties of this factor was the convergence of Strategic and Whole Language perspectives of reading instruction. The second factor of Instructional Practice, Programmatic Skills, indicated that instruction concentrated on students' mastery of discrete skills through a sequentially-ordered reading curriculum, and the use of teacher-centered instruction. Identification of the Programmatic Skills factor seemed to support the theory of the continuing influence of traditional reading instruction in British Columbia.

Research Question Two

Given derived reading instruction factors, what profiles can be developed to identify different homogeneous clusters of teachers?

Four groups of teachers based on similarities of their instructional practice were identified and profiles produced. Inspection of profiles between and across groups were the basis of their individual descriptions.

The largest group was called Eclectic and represented 42% of the teachers. This group took moderate stances to both perspectives of reading instruction represented in the Strategic Whole Language and Programmatic Skills factors. The second largest group, or 25% of teachers, followed what was termed a Basalized Whole Language approach. Teachers in this group held closely to the hierarchially-ordered curriculum and direct style of instruction which characterizes the Programmatic Skills factor. However, this group also incorporated some comprehension strategies and non-basal texts into their reading programs. The group labelled Conservative Whole Language group, or 18% of teachers, was the group that adhered most to Strategic Whole Language yet did not altogether reject Programmatic Skills. Finally, the group described as Uncategorized represented the smallest group, or 16% of teachers. These teachers rejected variables across both the Strategic Whole Language and Programmatic Skills factors.

Research Question Three

Given such differentiated clusters of teachers, what differences exist among these groups on measures of teachers' characteristics and classroom conditions?

Results of analyses of variance and chi-squares on eleven variables of teacher characteristics and four variables of classroom conditions revealed no differences among teacher groups at the .05 level of significance. Teacher characteristic variables were number of years of postsecondary education, number of years of pre-service teacher training, years of teaching, further study of teaching of reading, professional and casual readership, ranking of the reading program goals of comprehension, critical thinking, and enjoyment, homework assignment, and the use of grouping. Variables comprising Classroom Conditions were number of ESL students, number of texts per student, multigrade or straight-grade class, and level of principal engagement.

Research Question Four

Given such differentiated clusters of teachers, what differences exist among these groups on measures of their students' reading experiences and reading proficiency?

One-way analyses of variance were performed on the two groups of student variables—Student Reading Experience and Student Reading Achievement. At the .05 level of significance, no differences among teacher groups were found for any of the eight Student Reading Experience variables: Homework Intensity, Self-rating as a reader, Voluntary Reading, Reading Interactions, School Reading, and three variables of Perceptions of Reading Acquisition: Affective, Low Level, and High Level.

Student Reading Achievement consisted of scores on four reading domains: Narrative, Expository, Document, and Word Recognition. Results of one-way analyses of variance on each of these variables revealed no differences among teacher groups at the .05 level of significance.

Limitations

Interpretations of results of this study must be considered in light of two types of limitations. One group of limitations concerns validity of research instruments used in large scale studies. These limitations affect the validity of the description of reading instruction as well as the validity of findings of correlational analyses of teacher groups in this study. The other group of limitations pertains to the particular educational context from which the teacher sample was drawn and affects generalization of the findings. The following discussion first addresses the limitations of findings derived from the teacher questionnaire, the student questionnaire, and the student achievement test; and second, the limitations for generalizing findings to other educational systems.

The design and construction of research instruments used in international studies is a complex and problematic process. Attempts to achieve theoretical validity—of reading in the case of the IEA Reading Literacy Study—are complicated by linguistic, cultural, economic, and political factors. Additionally, items must serve first to identify variables across countries resulting in measures more characterized by grossness than refinement (McLean, 1990). In minimizing the limitations of international findings by

insuring a high degree of comparability of data, validity of findings from national data analysis was compromised.

Items in the IEA teacher questionnaire related to instructional practice are intended to distinguish approaches to instruction at the broadest level of skills-based and meaning-based approaches. Although these are valid distinctions at the international level, such widespread divisions do not necessarily allow for detections of variance within and across approaches. Such variations are common in educational systems such as Canada (BC) where local educational, social, and political developments have influenced teachers to form alternative or more complex approaches to reading instruction. Thus the broad conceptual basis of reading instruction underlying the items used to create a description of reading instruction in Canada (BC) needs to be considered when interpreting that description. Questionnaire items developed to capture local variables of reading instruction could have produced a different description.

Similarly, although results of the factor analyses were interpreted in light of three, not just two, perspectives of reading instruction (Traditional, Whole Language, and Strategic), other perspectives certainly exist. However, interpretation of teachers' responses to items on the teacher questionnaire dealing with instructional practice was at best suited to three alternative perspectives. Thus interpretation of both the factors of reading instruction and the teacher groups must be qualified by the theoretical frameworks circumscribed by the questionnaire items.

The teacher questionnaire also contained items which dealt with variables other than those directly related to instructional practice generally termed background variables. The major finding of no significant differences among teacher groups on these background variables flies in the face of growing evidence of influential contextual factors on instructional practice which have been identified by other methods than surveys (Buckles, 1993; Duffy & Anderson, 1984; Freeman et al., 1993; Richardson et al., 1991; Roehler & Putnam, 1986; Scharer, 1992). Again, findings from this study about the lack of affect of contextual variables on instruction need to be interpreted in light of the broadly-defined IEA teacher background variables.

Similar to the teacher questionnaire, the items from the student questionnaire used to create variables of student reading experiences in this study were originally constructed for the purpose of international differentiation. The global context of these variables, therefore, needs to be taken into account when

interpreting findings of correlational analyses of teacher groups on measures of their students' reading experiences.

The student reading achievement test was intended to represent the "knowledge and skills required by a literate society and/or valued by an individual." Compromises involving factors noted above came into play during the construction of the achievement test as well, resulting in a measure more closely aligned with basic reading skills than the types of processes and behaviors set forth in the literature as meaningful indicators of literacy achievement (Heath, 1991; Wells, 1990). Thus interpretation of findings about the influence of instruction on student achievement must keep in mind the specific notion of achievement represented in the student test.

Finally, British Columbia's particular educational context should be considered in any generalization of the description of teachers' personal professional knowledge of reading instruction created in this study to teachers in other educational systems. First, British Columbia's educational history demonstrates a relative favoritism of progressive educational ideas and methods over this century (Luke, 1988). This is not to deny the swing of the educational pendulum in British Columbia, but to note the province's comparatively progressive history particularly in reading instruction. Second, both the recently implemented provincial primary program (British Columbia Ministry of Education, 1990c) and language arts curriculum (British Columbia Ministry of Education, 1990b) are based on meaning-centered perspectives of language and learning. Additionally, university teacher training programs are linked to the provincial curriculum. Thus teachers in this sample were teaching in a system in which there was a high degree of support for meaning-based instruction from policy as well as from teacher training and development programs. Generalizations to teachers in other educational systems would have to take into account the educational climate of British Columbia. In more conservative climates, the description of reading instruction would likely be different. Finally, approaches to reading instruction identified in this study were restricted to those used by grade three teachers. Studies of approaches used by teachers at other grade levels could yield a different picture.

Conclusions

Based on the major findings reported above, a number of conclusions can be drawn. First, teachers' personal practical knowledge of reading instruction varied among teachers but not dramatically, and not in conformance to the commonly assumed dichotomies of code-based and meaning-based instruction. All teachers included multiple perspectives of reading instruction in varying degrees of emphasis in their own instructional practice. Thus, teachers' personal practical knowledge of reading instruction appeared more accurately to be an interaction of independent factors than a consistence adherence to one of the perspectives defined in the literature. Thus findings from this study did not support the paradigm shift claimed in the literature assuming that such a shift must involve both research and practice.

Second, it appeared that teachers' personal practical knowledge of reading instruction was not related to teacher background variables. This suggests either the presence of other variables to explain differences among teachers or that instructional practice is to some extent independent of background variables.

A third conclusion is that how teachers teach children to read was not related to their students' reading experiences. However, the current literatures of both teaching and reading instruction provide evidence of relationships between instruction and various student reading concepts, behaviors, and attitudes (Dahl & Freppon, 1995; Hagerty et al., 1989; Freebody et al., 1991; Morrow, 1992; Rasinski & deFord, 1988; Shapiro & Witte, 1990; Wing, 1991). Given the weight of this evidence, it is possible that other measures of student reading experiences would correlate with instructional approaches.

A final conclusion is that it was not possible to predict how teachers teach children to read by examining their students' achievement. Students' similar achievement across instructional approaches suggests equivalent effectiveness of several kinds of instruction for some, but not all, aspects of students' reading development. As relationships between instruction and student literacy development are only beginning to be unravelled in the literature, it would be unwise to generalize the non-significant instructional effects found in this study to any of what students are learning.

Implications

Based on the conclusions and limitations of the study, several implications are suggested. Two categories of implications are presented in the following sections. The first section deals with implications

for curriculum development, curriculum assessment, and teacher education. The second section suggests directions for further research.

Implications for Curriculum Development, Curriculum Assessment, and Teacher Education

For those involved in the development of British Columbia's reading curriculum, knowing how the province's teachers teach reading can be a valuable resource both during planning and implementation. The descriptions of teachers' instructional practice of reading produced in this study reveal that teachers across the province do not practice markedly diverse approaches but rather approaches that are more similar. In light of the overall pattern of conservative progressivism in reading instruction which emerged from this study, it is somewhat surprising that the provincial implementation of a meaning-based curriculum several years ago provoked such a degree of polarity among teachers. Results of this study show teachers were already incorporating many aspects of the new curriculum and suggest that meaning-centered instruction should have been more a matter of adjustment than a shift. The teaching literature suggests an explanation of this reaction and findings from this study offer a way to ease teachers' future responses to change.

Current views in the study of teaching assume that successful curriculum development must be premised on what teachers already know (Fenstermacher & Richardson, 1993; Richardson, 1990; Wittrock, 1985). Adhering to this principle minimizes the likelihood of teachers' reactions to perceived impositions from administration, and increases the possibility that teachers will use new directives as scaffolds of their personal development of instructional practice. Thus during provincial curriculum planning, findings from this study provide reference to what is already familiar to teachers. During curriculum implementation, these findings provide anchor points from which to carry out such support services as in-service training. For example, knowing that teachers are incorporating higher level comprehension strategies into their reading programs could be the basis of professional development aimed at guiding teachers towards embedding strategy instruction within a constructivist framework. In general, findings from this study imply that in order to promote the kind of literacy most upheld in literature on literacy, teacher and curriculum development in British Columbia should focus on guiding teachers towards conceptions of

literacy as higher-order literacy behaviors, literacy teaching as scaffolding, and literacy curriculum as rich, learner-centered experiences.

Findings regarding relationships between instruction and student achievement point to the need for assessment studies to go beyond measures of basic reading skills. Given the high profile accorded to comparative achievement scores in the public literature, it is especially important that assessment be based on students' reading concepts and attitudes for example, not just skills. Guidance for the development of such measures is available in the literature of reading instruction and in some of the province's educational documents. Efforts to obtain theoretical congruence between literacy curriculum and literacy assessment in large scale assessment studies are being made, as evidenced in the 1994 SAIP in Canada, the 1993 NAEP in the United States, as well as several individual states. These efforts need to be emphasized and continued so that theoretically valid assessment drives the curriculum at both the level of the classroom and the educational system.

A final implication of this study derives from finding no effect of teacher characteristics and classroom conditions on instruction. Literature in the study of teaching, particularly studies of teacher change, have identified the influence of more complex, more subtle factors than those available for investigation in this study. Factors which positively influence teacher development include feelings of ownership and control, and development programs in which theory is scaffolded onto practice and where traditional expert and follower roles are replaced with that of learner (Duffy, 1993; Fenstermacher & Richardson, 1993; Gallego & Hollingsworth, 1992; Richardson, 1990). Thus those involved in teacher education and teacher development in the language arts need to continue to focus on promoting reflective thinking, collaborative working skills, and decision-making along with current knowledge of reading instruction. But they also need to look more closely at the process through which teachers evolve their personal practical knowledge of reading instruction, and the nature of the influence of formal educational structures.

Directions for Further Research

Future studies of classroom reading instruction might respond to some of the issues raised in this study. First, in terms of understanding teachers' instructional practice of reading, efforts must be made

to insure congruence between the research instruments and current knowledge of the reading process and reading development. For example, current meaning-based perspectives of reading instruction include elements not previously associated with such approaches such as explicit instruction and comprehension strategies. Simplistic dichotomies of skills-based and meaning-based instruction are not able to capture the complexities of approaches now recommended in the literature.

Second, more attention to teachers' philosophy is needed, specifically in terms of their views about the social factors underlying literacy development given the increasing influence of sociocultural and sociocognitive views of literacy in the literature. In attending to teachers' thinking, research instruments should also insure that information about the coherence of teachers' philosophy and practices can be obtained.

Finally, coherence between literacy instruction and other parts of the curriculum should be considered. For too long, literacy instruction has assumed narrow boundaries in both research and practice. Now that literacy instruction is conceived in terms of not only language arts, but across the curriculum, it is important to understand what students are learning about reading and writing throughout the curriculum. The little research which has been done in this area shows that students' experiences with literacy in language arts is apt to be discrepant with experiences in other subject areas. In sum, instruments based on simplistic assumptions of skills-and meaning-based instructional approaches are of limited help in advancing literacy instruction, and ultimately, students' literacy development.

Second, in studies of relationships between instruction and student reading development (including achievement), theoretical congruence of the measures is necessary. If theoretically valid descriptions or measures of instruction are employed, as suggested above, the same validity concerns should be applied to whatever measures of student outcomes are used. If researchers use genuinely helpful instruments to gain information about instruction, then any corresponding measures of student learning should be closely linked to the goals inherent in the instructional issues addressed in the teacher instruments.

Third, and following closely from the second suggestion, there is a need to improve the types of indicators of student reading development in any study focusing on student literacy development. Evidence of student reading development should represent a range of knowledge, attitudes, and skills as defined by the literature of reading and should be collected over time—within or across grade levels (as is being done

in IEA studies currently in progress). In studies of classroom reading instruction, there is a movement towards understanding what students are learning (the attained curriculum) rather than focusing exclusively what teachers are doing (the implemented curriculum). Findings from future studies developing this trend are dependent on valid instruments in the case of quantitative studies, and knowledgeable observers in the case of ethnographic studies. All the above suggestions enforce the need for efforts to increase the validity of any measures used in large-scale assessments given the high profile of findings from such studies in the public literature.

In closing then, it is clear that both teachers and researchers are accountable for insuring that what students learn truly is "the knowledge and skills required by a literate society and/or valued by an individual."

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APPENDICES

Appendix A: Student Background Questionnaire



Reading Literacy:
 Student Questionnaire
 Population A

 **Directions:** (To be read by the teacher.)

Please answer all of the following questions as best as you can. If you need help, ask me .

A. Questions about yourself and your home (Questions 1 to 13)
--

- | | |
|---|----------------------------|
| <p>1 How old are you?
 _____ years and _____ months</p> <p>2 Are you a boy or a girl?
 <i>(Circle only one.)</i></p> <p> Boy..... 1
 Girl..... 2</p> | <p>—</p> <p>—</p> <p>—</p> |
|---|----------------------------|

- 3 How often do you speak *English* at home?
(Circle only one.)

Always 1
 Almost always 2
 Sometimes..... 3
 Hardly ever..... 4
 Never..... 5

What is the first language you learned? _____

- 4 How often do you eat each of the following meals?
(Circle one number on each line.)

	Never	1 or 2 times a week	3 or 4 times a week	Every day
Breakfast	1	2	3	4
Lunch	1	2	3	4
Evening meal	1	2	3	4

- 5 Do you get a **daily** newspaper at home?
(Circle only one.)

No 1
 Yes..... 2

- 6 On a school day, about how many hours do you usually watch TV or video
outside of school hours?
(Circle only one.)

I do not watch TV or video 1
 Up to 1 hour 2
 Between 1 and 2 hours 3
 Between 2 and 3 hours 4
 Between 3 and 4 hours 5
 Between 4 and 5 hours 6
 More than 5 hours 7

- 7 About how many books are there in your home?
(Do not count newspapers or magazines; circle only one.)

None 1
 1 - 10 2
 11 - 50..... 3
 51 - 100 4
 101 - 200..... 5
 More than 200 6

8 Please say whether you have the following things or not.
 (Check all that are found in your home. Check one box per line only.)

- | | No | Yes |
|-------------------------------|--------------------------|--------------------------|
| a) air conditioner | <input type="checkbox"/> | <input type="checkbox"/> |
| b) automatic washing machine | <input type="checkbox"/> | <input type="checkbox"/> |
| c) clothes dryer | <input type="checkbox"/> | <input type="checkbox"/> |
| d) computer | <input type="checkbox"/> | <input type="checkbox"/> |
| e) dishwasher | <input type="checkbox"/> | <input type="checkbox"/> |
| f) gas barbeque | <input type="checkbox"/> | <input type="checkbox"/> |
| g) microwave oven | <input type="checkbox"/> | <input type="checkbox"/> |
| h) portable fire extinguisher | <input type="checkbox"/> | <input type="checkbox"/> |
| i) stereo system | <input type="checkbox"/> | <input type="checkbox"/> |
| j) video recorder (VCR) | <input type="checkbox"/> | <input type="checkbox"/> |
| | (1) | (2) |

9 Please say whether you have the following things or not.
 (Check all that you have. Check one box per line only.)

- | | No | Yes |
|-------------------------------------|--------------------------|--------------------------|
| a) My own unshared bedroom | <input type="checkbox"/> | <input type="checkbox"/> |
| b) My own camera | <input type="checkbox"/> | <input type="checkbox"/> |
| c) My own portable stereo (blaster) | <input type="checkbox"/> | <input type="checkbox"/> |
| d) My own magazine subscription | <input type="checkbox"/> | <input type="checkbox"/> |
| e) My own TV | <input type="checkbox"/> | <input type="checkbox"/> |
| f) My own walkman | <input type="checkbox"/> | <input type="checkbox"/> |
| g) My own video games | <input type="checkbox"/> | <input type="checkbox"/> |
| h) My own video movies | <input type="checkbox"/> | <input type="checkbox"/> |
| | (1) | (2) |

10 How often do people at home read to you in English?
 (Circle only one.)

- Never..... 1
 1 or 2 times a week 2
 3 or 4 times a week 3
 Nearly every day..... 4

11 Is there any other place outside of school and your home where someone reads to you in English?
 (Circle only one.)

- No 1
 Yes..... 2

- 12 How often do people at home read to you in a language other than English?
(Circle only one.)

Never..... 1
 1 or 2 times a week 2
 3 or 4 times a week 3
 Nearly every day..... 4

- 13 Is there any other place outside of school and your home where someone reads to you in a language other than English?
(Circle only one.)

No 1
 Yes..... 2

B. Questions about your reading (Questions 14 to 18)

- 14 How often do you borrow books from a school or public library?
(Circle only one.)

Never..... 1
 Hardly ever..... 2
 Once a month..... 3
 Once a week..... 4
 More than once a week 5

- 15 How good are you at reading?
(Circle only one.)

Not very good 1
 Average..... 2
 Good..... 3
 Very good..... 4

- 16 Which do you think are the **three** most important **ways** to become a good reader?

(Check only three.)

MOST IMPORTANT

- | | | |
|---|--------------------------|---|
| a) Liking reading | <input type="checkbox"/> | — |
| b) Having lots of time to read | <input type="checkbox"/> | — |
| c) Being able to concentrate well | <input type="checkbox"/> | — |
| d) Knowing how to sound out words | <input type="checkbox"/> | — |
| e) Learning the meaning of lots of words | <input type="checkbox"/> | — |
| f) Having many good books around | <input type="checkbox"/> | — |
| g) Having a lively imagination | <input type="checkbox"/> | — |
| h) Having lots of reading for homework | <input type="checkbox"/> | — |
| i) Having lots of drill (practice) at hard things | <input type="checkbox"/> | — |
| j) Having lots of written exercises | <input type="checkbox"/> | — |
| k) Being told how to do it | <input type="checkbox"/> | — |

(2)

- 17 How often do you read in English to someone at home?
(Circle only one.)

Never..... 1
1 or 2 times a week 2
3 or 4 times a week 3
Nearly every day..... 4

- 18 How often do your parents or other people at home ask you what you have been reading?
(Circle only one.)

Never..... 1
1 or 2 times a week 2
3 or 4 times a week 3
Nearly every day..... 4

C. Questions about your reading homework and your classroom work (Questions 19 to 24)
--

- 19 How often do you get **reading homework**? (Circle only one.)

Never..... 1
1 or 2 times a week 2
3 or 4 times a week 3
Every day..... 4

- 20 When you have reading homework about how much time do you spend on it?
(Circle only one.)
- None 1
Up to 15 minutes..... 2
16- 30 minutes..... 3
More than 30 minutes 4
- 21 How often are you asked questions in class about your reading homework?
(Circle only one.)
- I do not get reading homework..... 1
Always..... 2
Most of the time 3
Sometimes..... 4
Hardly ever..... 5
Never 6
- 22 How often are you helped with your reading homework?
(Circle only one.)
- I do not get reading homework 1
I rarely get help 2
I sometimes get help..... 3
I get help most of the time 4
- 23 If you don't finish the reading work you get to do by yourself in class, are you
expected to finish it in your own time?
(Circle only one.)
- Always 1
Most of the time 2
Sometimes 3
Hardly ever 4
Never 5
I do not get reading work to do by myself in class..... 6
- 24 How often are you given written work about the reading work that you have
been given?
(Circle only one.)
- Always 1
Most of the time 2
Sometimes..... 3
Hardly ever..... 4
Never..... 5

D. Reading for Enjoyment (Questions 25 to 37)

25 Did you read a **book** for fun last week? (*Circle only one.*)

No 1
Yes..... 2

(*If 'Yes', write in the title or author of the book.*)

Book title/author: _____

26 How often do you read **books** for fun?
(*Circle only one.*)

Almost never 1
About once a month..... 2
About once a week 3
Almost every day..... 4

27 Did you read a **comic book** last week?
(*Circle only one.*)

No 1
Yes..... 2

(*If 'Yes', write in the title or the person in the story.*)

Comic book title/person: _____

28 How often do you read **comic books**?
(*Circle only one.*)

Almost never 1
About once a month..... 2
About once a week 3
Almost every day..... 4

29 Did you read a **magazine** last week?
(*Circle only one.*)

No 1
Yes..... 2

(*If 'Yes', write in the title of the magazine or the topic you read about.*)

Magazine title/topic: _____

30 How often do you read **magazines**?
(Circle only one.)

- Almost never 1
 About once a month..... 2
 About once a week 3
 Almost every day..... 4

31 Did you read a **newspaper** last week?
(Circle only one.)

- No 1
 Yes..... 2

(If 'Yes', write in the name of the newspaper.)

Newspaper name: _____

32 How often do you read **newspapers**?
(Circle only one.)

- Almost never 1
 About once a month..... 2
 About once a week 3
 Almost every day..... 4

33 How often do you read directions or instructions to do something you enjoy?
(You might read them to put a toy together, to play a game, to use a computer
or to do something else. Circle only one.)

- Almost never 1
 About once a month..... 2
 About once a week 3
 Almost every day..... 4

34 Do you read aloud at home?
(Circle only one.)

- No 1
 Yes..... 2

- 35 How often do you read aloud to someone at home?
(Circle only one.)

Never. I do not read aloud to someone at home..... 1
 Less than 1 time per week..... 2
 1 to 3 times per week..... 3
 Nearly every day..... 4

- 36 To whom do you read aloud at home?
(Circle only one.)

No one. I do not read aloud at home..... 1
 Parents..... 2
 Brother or sister..... 3
 Other person..... 4

- 37 What do you read aloud at home?
(You may check more than one.)

Nothing. I do not read aloud at home
 Newspaper.....
 Magazine.....
 Book.....
 Textbook.....
 Comic book.....
 Letters.....
 Words on television screens.....
 (2)

E. Reading in School (Questions 38 to 43)

- 38 In school, how often do you read **readers** in reading or language class?
(Circle only one.)

Almost never 1
 About once a month..... 2
 About once a week 3
 Almost every day..... 4

- 39 How often do you read **story books** in addition to your readers in reading or language class?
(Circle only one.)
- Almost never 1
About once a month..... 2
About once a week 3
Almost every day..... 4
- 40 How often do you use **workbooks** or practice exercises in reading or language class?
(Circle only one.)
- Almost never 1
About once a month..... 2
About once a week 3
Almost every day..... 4
- 41 In school, how often do you read **textbooks** or practice exercises in science, social studies or environmental studies?
(Circle only one.)
- Almost never 1
About once a month..... 2
About once a week 3
Almost every day..... 4
- 42 How often do you look up information in books like encyclopedias, dictionaries, manuals or maps for schoolwork?
(Circle only one.)
- Almost never 1
About once a month..... 2
About once a week 3
Almost every day..... 4
- 43 If you have a favourite book, please fill in the title below.
-

Thank you very much for your cooperation.

Appendix B: Teacher Background Questionnaire

Teacher Questionnaire - Population A ref. RL/ALL/90.472



Reading Literacy:

Teacher Questionnaire Population A

 **Directions:**

Please answer the following groups of questions as best as you can. Most questions require you to circle your selected response. Others require you to write in a number. Where it is appropriate to enter '0' in the answer, please do so. Do not leave blanks.

We thank you for your effort.

A The first set of questions has to do with you and your educational training (Questions 1 to 9)

1 Your sex:
(Circle one number only.)

Male..... 1
Female..... 2

2 Is English your mother-tongue?
(Circle one number only.)

No..... 1
Yes..... 2

If no, what is your mother-tongue (or first language)?_____

Teacher Questionnaire - Population A ref. RL/ALL/90.472

- 3 How many years of elementary and secondary school education did you have altogether?
(Do not include pre-compulsory education e.g. Kindergarten. Also do not count grade repetition years.)

_____ years (or full-time equivalent years.)

- 4 To what category has the Teacher Qualification Service assigned you?
(If you have had no post-secondary education, please enter '0'.)

TQS Category 0 1 2 3 4 5 6 Other

- 5 How many full year equivalents of post-secondary education do you have?
(If you have had no post-secondary education please enter '0'.)

_____ years (or full-time equivalent years.)

- 6 Approximately how many hours have you devoted to the further study of the teaching of reading after your initial teacher qualifications? (a 1.5 unit course equals 36 hours or 3 semester hours.)
(Circle one number only.)

None..... 1
Less than 10 hours 2
10 to 29 hours 3
30 to 49 hours 4
50 to 100 hours 5
More than 100 hours..... 6

- 7 How many times have you been to an in-service in reading in the last three years?
(Circle one number only.)

None..... 1
Once..... 2
Twice..... 3
Three times 4
Four or more times..... 5

Teacher Questionnaire - Population A ref. RL/ALL/90.472

8 About how often do you read each of the following?
 (Do not include reading for preparation of class lessons.
 Circle one number per line only.)

	never or almost never	once a year	about once a term	about once a month	about once a week or more
a) Articles on teaching	1	2	3	4	5
b) Articles on reading	1	2	3	4	5
c) Books / articles on history or politics	1	2	3	4	5
d) Books /articles on the arts	1	2	3	4	5
e) Books /articles on science	1	2	3	4	5
f) Novels or short stories	1	2	3	4	5
g) Poems	1	2	3	4	5
h) Plays	1	2	3	4	5
i) Books for children	1	2	3	4	5

9 By the end of this school year how many years will you have been teaching altogether?

_____ years (or full-time equivalent years.)

B. This set of questions has to do with your class being tested (Questions 10 to 19)

10 How long have you been teaching the class being tested?
 (Circle one number only.)

- Less than half a year..... 1
- Between half a year and one year..... 2
- Between one year and two years..... 3
- Between two years and three years..... 4
- More than three years 5

11 Is the class tested a multi-grade class?
 (Circle one number only.)

- No 1
- Yes..... 2

12 What is the total number of students and the total number of *Grade three* students in *this* class?

_____ total students _____ Grade three students

Teacher Questionnaire - Population A ref. RL/ALL/90.472

- 13 How many Grade three students in this class do not have English as their first language?
(If none, please enter '0'.)
_____ students
- 14 As a general rule, how often do you meet formally with parents /guardian of the students in the class tested?
(Circle one number only.)
Never..... 1
Once a year 2
Once a term..... 3
Once a month or more..... 4
- 15 How many students in this class need remedial help in reading?
(If none, please enter '0'.)
_____ students
- 16 How many students in this class receive remedial help in reading?
(If none, please enter '0'.)
_____ students
- 17 What is the number of hours and minutes of total instructional time excluding breaks for this class in a typical week? (For all subject areas.)
_____ hours and _____ minutes per week
- 18 How much class time per school week do you typically devote to the teaching and learning of *English* including reading, writing, speaking, listening, and other language skills?
_____ hours and _____ minutes per week
- 19 How much class time per school week do you typically devote to the teaching and practice of reading in English?
_____ hours and _____ minutes per week

**C. The following set of questions has to do with your teaching
(Questions 20 to 35)**

- 20 How often are your students typically involved in the following reading activities?
(Circle one number per line only.)

Reading Activities	Frequency			
	almost never	about once a month	about 1 or 2 times a week	almost every day
a) Learning letter-sound relationships and/or phonics	1	2	3	4
b) Learning other word-attack skills	1	2	3	4
c) Silent reading in class	1	2	3	4
d) Answering reading comprehension exercises in writing	1	2	3	4
e) Independent silent reading in a library	1	2	3	4
f) Listening to students reading aloud to a whole class	1	2	3	4
g) Listening to students reading aloud to small groups or pairs	1	2	3	4
h) Listening to teachers reading stories aloud	1	2	3	4
i) Discussion of books read by students	1	2	3	4
j) Learning new vocabulary systematically (e.g. from lists)	1	2	3	4
k) Learning new vocabulary incidentally from texts	1	2	3	4
l) Learning library skills	1	2	3	4
m) Reading plays or dramas	1	2	3	4
n) Playing reading games	1	2	3	4
o) Dramatizing stories	1	2	3	4
p) Drawing in response to reading	1	2	3	4
q) Summarizing their reading	1	2	3	4
r) Relating experiences to reading	1	2	3	4
s) Reading other students' writing	1	2	3	4
t) Making predictions during reading	1	2	3	4
u) Diagramming story content	1	2	3	4
v) Looking for the theme or message	1	2	3	4
w) Making generalizations and inferences	1	2	3	4
x) Studying the style or structure of a text	1	2	3	4
y) Comparing pictures and stories	1	2	3	4
z) Student leading discussion about passage	1	2	3	4
aa) Reading in other subject areas	1	2	3	4
bb) Writing in response to reading	1	2	3	4

Teacher Questionnaire - Population A ref. RL/ALL/90.472

21 In a normal reading instruction period how many reading textbooks are available for each student in the class tested?
(Circle only the most appropriate answer.)

- None 1
- 1 book for about 5 or more students 2
- 1 book for each 2 students 3
- 1 book for each student 4
- 2 books for each student 5
- 3 or more books for each student 6

If you selected "None" please explain _____

22 Please rank only five of the following aims of reading instruction in order of the importance you attach to each of them.
(Place a '1' next to the most important and so on to "5" for the least important. Use each ranking once only.)

Aims	Importance
a) Developing skill in reading aloud	_____
b) Developing a lasting interest in reading	_____
c) Improving students' reading comprehension	_____
d) Developing students' research and study skills	_____
e) Extending students' vocabulary	_____
f) Developing students' critical thinking	_____
g) Expanding students' world views	_____
h) Deepening students' emotional development	_____
i) Improving word-attack skills	_____
j) Increasing speed of reading	_____
k) Expanding students' reading choice	_____
l) Making reading enjoyable	_____

Teacher Questionnaire - Population A ref. RL/ALL/90.472

23 How often do you use the following instructional strategies when teaching reading?
(Circle one number per line only.)

Instructional Strategies	Frequency			
	almost never	about once a month	about 1 or 2 times a week	almost every day
a) Accessing prior knowledge	1	2	3	4
b) Ask children to describe their strategy for understanding	1	2	3	4
c) Encourage parents to be involved with the reading program	1	2	3	4
d) Maintaining a graded sequence of text difficulty	1	2	3	4
e) Ask questions to assess text comprehension	1	2	3	4
f) Ask questions to deepen understanding	1	2	3	4
g) Show children how to understand a text	1	2	3	4
h) Compare stories, poems, fables and tales	1	2	3	4
i) Read aloud to children	1	2	3	4
j) Encourage parents to read to children	1	2	3	4
k) Encourage the children to read more	1	2	3	4
l) Encourage children to use the library more	1	2	3	4
m) Use materials you have prepared yourself	1	2	3	4

24 Do you divide the students in this class into groups for reading instructions?

- No.....1
- Yes.....2

If you answered "No" to this question, go straight to Question 27.

25 What type of grouping do you use most often?
(Circle one number only.)

- Do not use grouping.....1
- Age groups.....2
- Ability groups.....3
- Interest groups.....4
- Other (please specify).....5

26 How many groups do you typically form?

----- groups

Teacher Questionnaire - Population A ref. RL/ALL/90.472

- 27 This year how frequently did you teach students how to read each of the following kinds of text?
(Circle one number per line only.)

	Frequency				
	almost never	3 or 4 times a year	about once a month	at least once a week	nearly every day
a) Narration: texts that tell a story or give the order in which things happen	1	2	3	4	5
b) Exposition: texts that describe things or people or explain how things work or why things happened	1	2	3	4	5
c) Documents: tables, charts, diagrams, lists, maps	1	2	3	4	5

- 28 Below you will find a number of statements about which we ask you to give your views with respect to issues in reading instruction.
(Please mark for each statement your degree of agreement / disagreement by circling the appropriate number. Circle one number on each line.)

	strongly disagree	disagree	uncertain	agree	strongly agree	
1. When my pupils read to me, I expect them to read every word accurately.	1	2	3	4	5	—
2. Teachers should keep careful records of every child's reading progress.	1	2	3	4	5	—
3. Children should not be encouraged to read a word they don't know.	1	2	3	4	5	—
4. All children should enjoy reading.	1	2	3	4	5	—
5. Most of what a child reads should be assessed.	1	2	3	4	5	—
6. Every day children should be read to by the teacher from a story book.	1	2	3	4	5	—
7. Reading aloud by children to a class is a waste of time.	1	2	3	4	5	—
8. Most children improve their reading best by extensive reading on their own.	1	2	3	4	5	—
9. Children should always understand why they are reading.	1	2	3	4	5	—
10. Teachers should always group children, according to their reading ability.	1	2	3	4	5	—
11. 9-year-olds should not have access to books they will read in the next year at school.	1	2	3	4	5	—
12. Class sets of graded reading material should be used as the basis for the reading program.	1	2	3	4	5	—
13. Children who can't understand what they read haven't been taught proper comprehension skills.	1	2	3	4	5	—
14. Every mistake a child makes in reading aloud should be corrected at once.	1	2	3	4	5	—

Teacher Questionnaire - Population A ref. RL/ALL/90.472

15. All children's comprehension assignments should be marked carefully to provide them with feedback.	1	2	3	4	5	_____
16. Children should not start a new book until they have finished the last.	1	2	3	4	5	_____
17. Parents should be actively encouraged to help their children with reading.	1	2	3	4	5	_____
18. Children should learn most of their new words from lessons designed to enhance their vocabulary.	1	2	3	4	5	_____
19. Reading learning materials should be carefully sequenced in terms of language structures and vocabulary.	1	2	3	4	5	_____
20. Children should take a book home to read every day.	1	2	3	4	5	_____
21. Children should be encouraged to read texts they have written.	1	2	3	4	5	_____
22. Children should always understand what they are reading.	1	2	3	4	5	_____
23. Children should always choose their own books to read.	1	2	3	4	5	_____
24. A word recognition test is sufficient for assessing children's reading levels.	1	2	3	4	5	_____
25. Teachers should carefully follow the sequence of the textbook.	1	2	3	4	5	_____
26. Children should undertake research projects to improve their reading.	1	2	3	4	5	_____

29 What do you regularly do (i.e. at least once a week) to encourage your students to read outside school?
(You may circle more than one number.)

- | | | |
|--|---|-------|
| a) Suggest books to students to read | 1 | _____ |
| b) Suggest newspaper articles to students to read..... | 2 | _____ |
| c) Read attractive stories to students..... | 3 | _____ |
| d) Hold discussions about books | 4 | _____ |
| e) Other | 5 | _____ |

Teacher Questionnaire - Population A ref. RL/ALL/90.472

30 How often do you use the following methods to discover your students' needs in reading?

(Circle one number per line only.)

	never or almost never	once a year	about once a term	about once a month	about once a week or more	
a) Listening to students' reading	1	2	3	4	5	_____
b) Teacher-made vocabulary tests	1	2	3	4	5	_____
c) Exercises and tests in workbooks and textbooks	1	2	3	4	5	_____
d) Standardized or formal tests of comprehension	1	2	3	4	5	_____
e) Knowledge of students' reading interests	1	2	3	4	5	_____
f) Comments from other teachers	1	2	3	4	5	_____
g) Informal observation	1	2	3	4	5	_____
h) Interviews	1	2	3	4	5	_____
i) Tests in workbooks and text books	1	2	3	4	5	_____

31 How often do you assess these aspects of reading with all or most of your class?

(Circle one number per line only.)

	never or almost never	once a year	about once a term	about once a month	about once a week or more	
a) Word recognition	1	2	3	4	5	_____
b) Vocabulary	1	2	3	4	5	_____
c) Text comprehension	1	2	3	4	5	_____
d) Literary appreciation	1	2	3	4	5	_____
e) Use of background knowledge	1	2	3	4	5	_____
f) Sentence understanding	1	2	3	4	5	_____
g) Phonic skills	1	2	3	4	5	_____
h) Reading study skills	1	2	3	4	5	_____
i) Amount of reading	1	2	3	4	5	_____
j) Decoding	1	2	3	4	5	_____

32 How often do you use these assessment methods?
(Circle one number per line only.)

	never or almost never	once or twice a year	about once a term	about once a month	about once a week or more
a) Multiple-choice questions of reading	1	2	3	4	5
b) Listening to students reading aloud	1	2	3	4	5
c) Records of student interests	1	2	3	4	5
d) Oral discussions	1	2	3	4	5
e) Oral questions on material read	1	2	3	4	5
f) Written open-ended questions on material read	1	2	3	4	5

33 Do you assign homework in reading to the class tested?
(Circle one number only.)

- No 1
- Yes..... 2

➡ If you answered 'No' to Question 33, go straight to Question 36

34 How often do you ask children to read something at home as part of your reading/language program?
(Circle one number only.)

- Never 1
- Less than once a week 2
- 1 or 2 times a week 3
- 3 or 4 times a week 4
- More than 4 times a week..... 5

35 About how many minutes do you expect an average student to spend on reading homework when you assign it?
(Circle one number only.)

- None 1
- Up to 10 minutes 2
- 11 - 20 minutes 3
- 21 - 30 minutes 4
- 31 - 40 minutes 5
- 41 - 50 minutes 6
- More than 50 minutes 7

D. The following set of questions has to do with your classroom library (Questions 36 to 39)

- 36 Do you have a **classroom library** (i.e. a small book or magazine corner in your classroom)?
(Circle one number only.)

No 1
Yes..... 2

➡ If you answered 'No' to Question 36 please go to Question 40.

- 37 About how many **books** with different titles does your classroom library contain?
(Circle one number only.)

Less than 20..... 1
21-40 2
41-60 3
61-80 4
81-100 5
More than 100.... 6

- 38 About how many **different titles** of **magazines and/or newspapers** do you have in your classroom library?
(Circle one number only.)

None..... 1
1-5 2
6-10..... 3
11-15 4
16-20 5
More than 20..... 6

- 39 Can your students borrow books from the **classroom library** to take home?
(Circle one number only.)

No 1
Yes..... 2

**E. The following set of questions is about your school library
(Questions 40 to 42)**

- 40 Do you have a school library in your school?
(Circle one number only.)

No 1
Yes..... 2

➤ **If you answered 'No' to Question 40, then stop here. Thank you.**

- 41 How often do your students visit the school library as a class?
(Circle one number only.)

Hardly ever 1
Once a month 2
Once a week 3
More than once a week 4

- 42 May your students borrow books from the school library to take home?
(Circle one number only.)

No 1
Yes..... 2

**F. The following set of questions are to do with school organization.
(Questions 43 to 48)**

- 43 Is your work as a teacher evaluated by the school principal (vice-principal or head teacher.) (Circle one number only.)

No.....1
Yes.....2

Teacher Questionnaire - Population A ref. RL/ALL/90.472

44 Does the school principal (vice principal, head teacher)...
(Check the appropriate answers.)

	No	Yes	
a) discuss with you explicit achievement standards for the subjects that you teach	1	2	_____
b) ask for evaluation results or progress of your students in reading	1	2	_____
c) make suggestions about the choice of instructional methods in reading	1	2	_____
d) encourage contacts among teachers	1	2	_____
e) initiate activities directed at the professional development of teachers	1	2	_____
f) make suggestions about the content that must be covered in reading	1	2	_____

45 How often do you have staff meetings at your school?
(Check only one number.)

- Never 1
- Once a year..... 2
- Once a term..... 3
- Monthly.....4
- Weekly.....5

Teacher Questionnaire - Population A ref. RL/ALL/90.472

46. If you have staff meetings, please indicate how often the following items occur as subjects of discussion during staff meetings. (Circle one number per line only.)

	all staff meetings	most staff meetings	some staff meeting	not in any staff meeting
a) Curriculum content	1	2	3	4
b) the way subject matter is presented	1	2	3	4
c) professional development of teachers	1	2	3	4
d) issues of 'pastoral care'(e.g. student problems, guidance,welfare)	1	2	3	4
e) organizational issues (e.g. school, climate co-ordination of work among teachers, the way decision-making procedures are conducted	1	2	3	4
f) other topics (e.g. purely administrative tasks,leisure and social activities)	1	2	3	4

- 47 How often do you have department meetings at your school?
(Check only one.)

Never1
Once a year..... 2
Once a term..... 3
Monthly.....4
Weekly.....5

Teacher Questionnaire - Population A ref. RL/ALL/90.472

- 48 If you have department meetings, please indicate how often the following items occur as subjects of discussion during staff meetings. (Circle one number per line only.)

	all dept. meetings	most dept. meetings	some dept. meeting	not in any dept. meeting
a) Curriculum content	1	2	3	4
b) the way subject matter is presented	1	2	3	4
c) professional development of teachers	1	2	3	4
d) issues of 'pastoral care'(e.g. student problems, guidance,welfare)	1	2	3	4
e) organizational issues (e.g. school, climate co-ordination of work among teachers, the way decision-making procedures are conducted	1	2	3	4
f) other topics (e.g. purely administrative tasks,leisure and social activities)	1	2	3	4

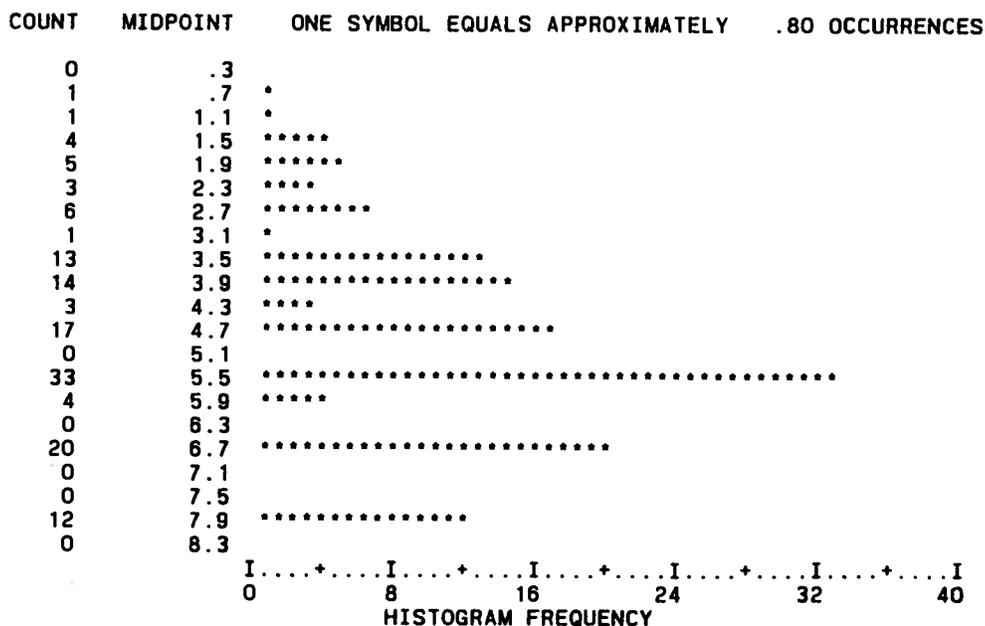
- 49 Which ONE of the following methods MOST NEARLY describes what you use to teach reading in your classroom.

- a. Reading series
Name of series _____
- b. Language experience, or Integrated approach
- c. Literature-based, or Whole language
- d. Some combination of (a), (b), and (c)
Please specify _____
- e. None of the above
Please explain _____

Thank you very much for your cooperation.

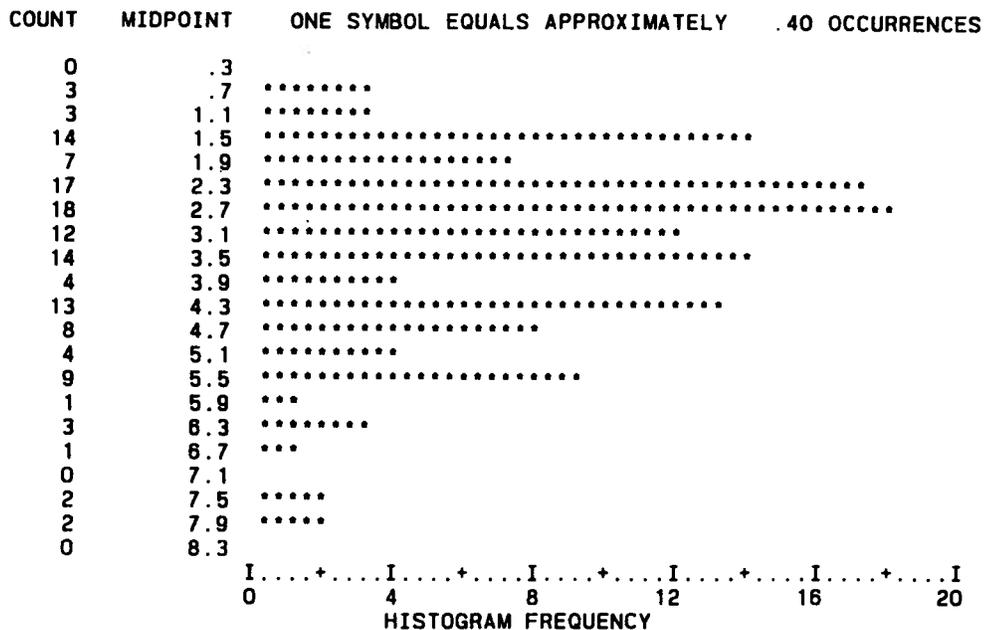
Appendix C: Distribution of Teachers' Professional reading

VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.67	1	.7	.7	.7
1.00	1	.7	.7	1.5
1.67	4	2.8	2.9	4.4
2.00	5	3.4	3.6	8.0
2.33	3	2.1	2.2	10.2
2.67	6	4.1	4.4	14.6
3.00	1	.7	.7	15.3
3.33	10	6.9	7.3	22.6
3.67	3	2.1	2.2	24.8
4.00	14	9.7	10.2	35.0
4.33	3	2.1	2.2	37.2
4.67	17	11.7	12.4	49.6
5.33	33	22.8	24.1	73.7
6.00	4	2.8	2.9	76.6
6.67	20	13.8	14.6	91.2
8.00	12	8.3	8.8	100.0
.	8	5.5	MISSING	
TOTAL	145	100.0	100.0	



Appendix D: Distribution of Teachers' Casual reading

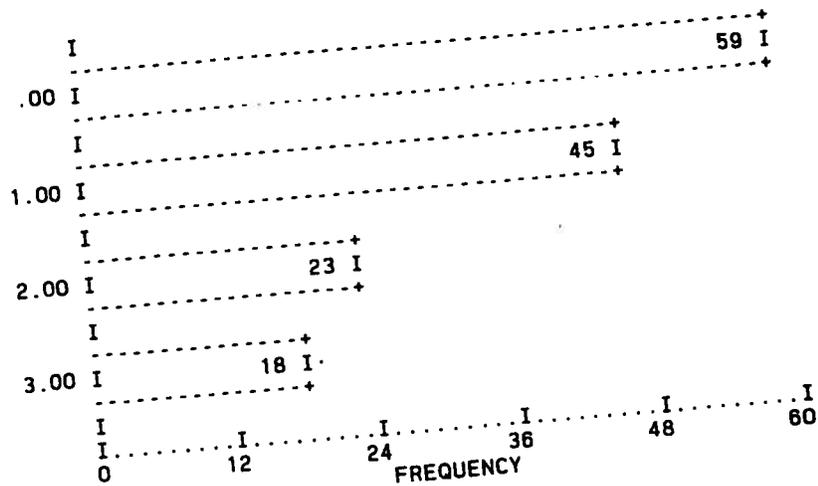
VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.67	2	1.4	1.5	1.5
.83	1	.7	.7	2.2
1.00	3	2.1	2.2	4.4
1.33	5	3.4	3.7	8.1
1.50	6	4.1	4.4	12.6
1.67	3	2.1	2.2	14.8
1.83	3	2.1	2.2	17.0
2.00	4	2.8	3.0	20.0
2.17	11	7.6	8.1	28.1
2.33	6	4.1	4.4	32.6
2.50	7	4.8	5.2	37.8
2.67	6	4.1	4.4	42.2
2.83	5	3.4	3.7	45.9
3.00	4	2.8	3.0	48.9
3.17	8	5.5	5.9	54.8
3.33	8	5.5	5.9	60.7
3.50	2	1.4	1.5	62.2
3.67	4	2.8	3.0	65.2
3.83	1	.7	.7	65.9
4.00	3	2.1	2.2	68.1
4.17	3	2.1	2.2	70.4
4.33	10	6.9	7.4	77.8
4.50	1	.7	.7	78.5
4.67	5	3.4	3.7	82.2
4.83	2	1.4	1.5	83.7
5.00	4	2.8	3.0	86.7
5.33	2	1.4	1.5	88.1
5.67	7	4.8	5.2	93.3
6.00	1	.7	.7	94.1
6.17	2	1.4	1.5	95.6
6.33	1	.7	.7	96.3
6.67	1	.7	.7	97.0
7.33	2	1.4	1.5	98.5
8.00	2	1.4	1.5	100.0
.	10	6.9	MISSING	
TOTAL	145	100.0	100.0	



VALID CASES 135 MISSING CASES 10

Appendix E: Distribution of Princip ^{gagement}

VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	59	40.7	40.7	40.7
1.00	45	31.0	31.0	71.7
2.00	23	15.9	15.9	87.6
3.00	18	12.4	12.4	100.0
TOTAL	145	100.0	100.0	



VALID CASES

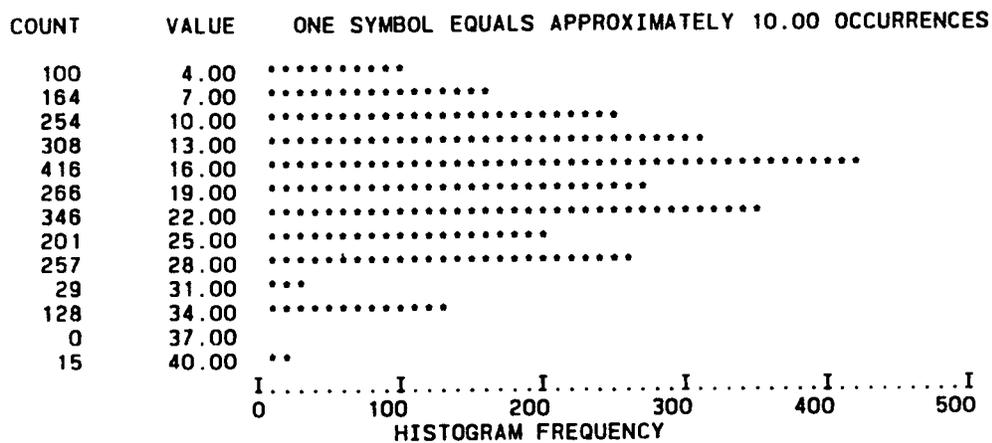
145

MISSING CASES

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Appendix F: Distribution of Students' School Reading

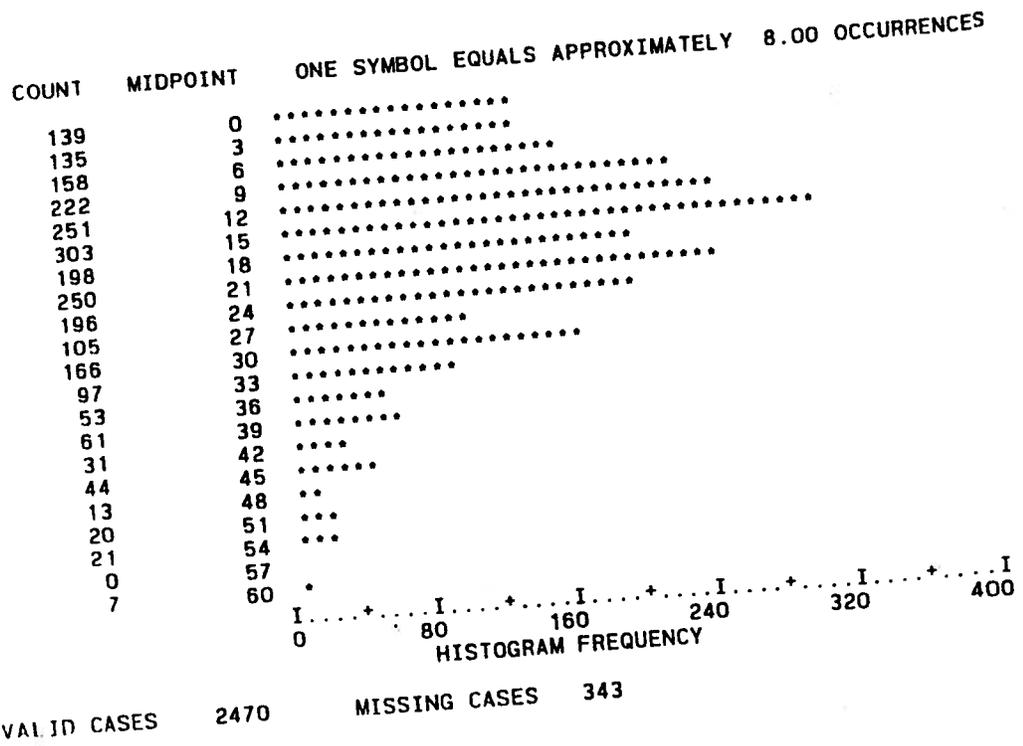
VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
4.00	100	3.6	4.0	4.0
7.00	164	5.8	6.6	10.6
10.00	254	9.0	10.2	20.9
13.00	308	10.9	12.4	33.3
16.00	416	14.8	16.7	50.0
19.00	266	9.5	10.7	60.7
22.00	346	12.3	13.9	74.6
25.00	201	7.1	8.1	82.7
28.00	257	9.1	10.3	93.1
31.00	29	1.0	1.2	94.2
34.00	128	4.6	5.2	99.4
40.00	15	.5	.6	100.0
	329	11.7	MISSING	
TOTAL	2813	100.0	100.0	



VALID CASES 2484 MISSING CASES 329

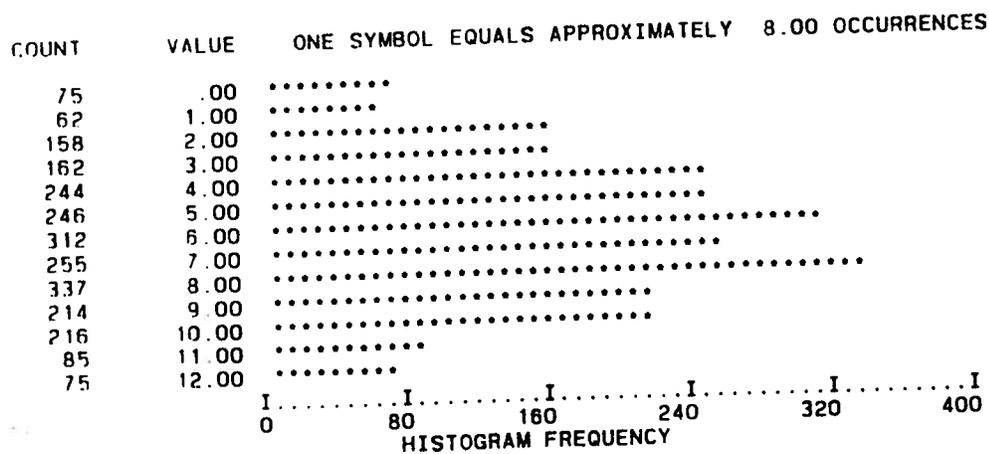
Appendix G: Distribution of Students' Voluntary Reading

VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	73	2.6	3.0	3.0
1.00	66	2.3	2.7	5.6
2.00	40	1.4	1.6	7.2
3.00	25	.9	1.0	8.3
4.00	70	2.5	2.8	11.1
5.00	77	2.7	3.1	14.2
6.00	52	1.8	2.1	16.3
7.00	29	1.0	1.2	17.5
8.00	50	1.8	2.0	19.5
9.00	60	2.1	2.4	21.9
10.00	112	4.0	4.5	26.5
11.00	109	3.9	4.4	30.9
12.00	81	2.9	3.3	34.2
13.00	61	2.2	2.5	36.6
14.00	118	4.2	4.8	41.4
15.00	110	3.9	4.5	45.9
16.00	75	2.7	3.0	48.9
17.00	40	1.4	1.6	50.5
18.00	83	3.0	3.4	53.9
19.00	75	2.7	3.0	56.9
20.00	113	4.0	4.6	61.5
21.00	80	2.8	3.2	64.7
22.00	57	2.0	2.3	67.0
23.00	44	1.6	1.8	68.8
24.00	92	3.3	3.7	72.6
25.00	60	2.1	2.4	75.0
26.00	51	1.8	2.1	77.0
27.00	22	.8	.9	77.9
28.00	32	1.1	1.3	79.2
29.00	54	1.9	2.2	81.4
30.00	84	3.0	3.4	84.8
31.00	28	1.0	1.1	86.0
32.00	42	1.5	1.7	87.7
33.00	19	.7	.8	88.4
34.00	36	1.3	1.5	89.9
35.00	32	1.1	1.3	91.2
36.00	21	.7	.9	92.0
38.00	20	.7	.8	92.8
39.00	23	.8	.9	93.8
40.00	18	.6	.7	94.5
41.00	16	.6	.6	95.1
42.00	15	.5	.6	95.7
44.00	25	.9	1.0	96.8
45.00	19	.7	.8	97.5
48.00	13	.5	.5	98.1
50.00	13	.5	.5	98.6
51.00	7	.2	.3	98.9
54.00	21	.7	.9	99.7
60.00	7	.2	.3	100.0
.	343	12.2	MISSING	
TOTAL	2813	100.0	100.0	



Appendix H: Distribution of Students' Reading Interactions

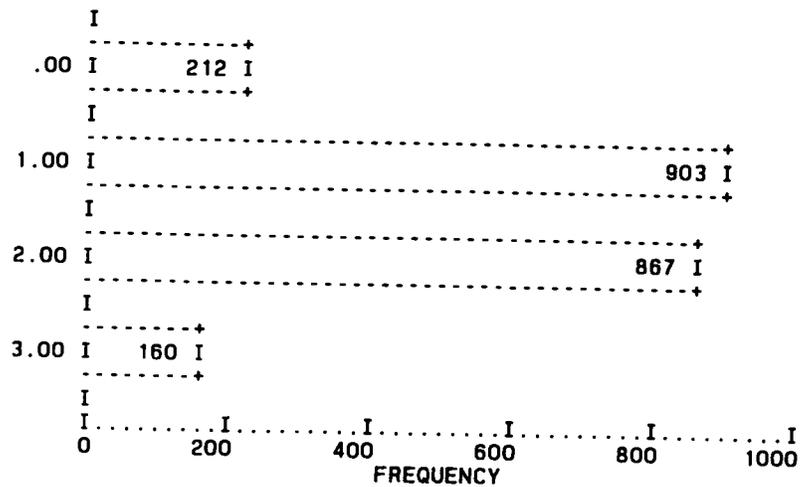
VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	75	2.7	3.1	3.1
1.00	62	2.2	2.5	5.6
2.00	158	5.6	6.5	12.1
3.00	162	5.8	6.6	18.7
4.00	244	8.7	10.0	28.7
5.00	246	8.7	10.1	38.8
6.00	312	11.1	12.8	51.6
7.00	255	9.1	10.4	62.0
8.00	337	12.0	13.8	75.8
9.00	214	7.6	8.8	84.6
10.00	216	7.7	8.8	93.4
11.00	85	3.0	3.5	96.9
12.00	75	2.7	3.1	100.0
	372	13.2	MISSING	
TOTAL	2813	100.0	100.0	



VALID CASES 2441 MISSING CASES 372

Appendix I: Distribution of Students' Affective Perception of Reading Acquisition

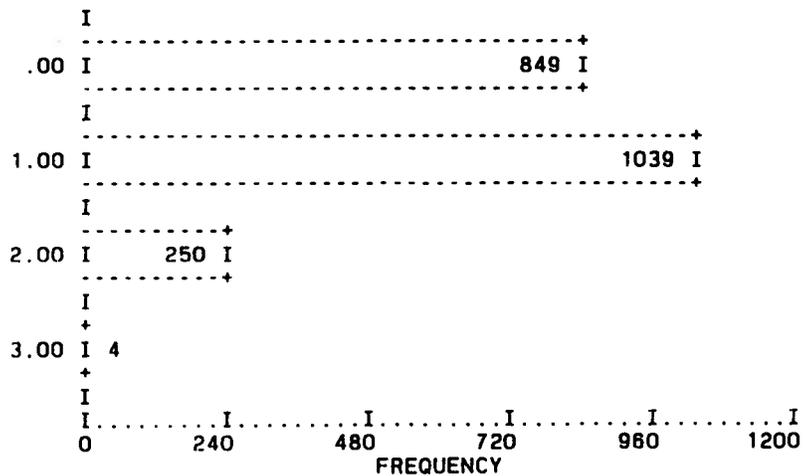
VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	212	7.5	9.9	9.9
1.00	903	32.1	42.2	52.1
2.00	867	30.8	40.5	92.5
3.00	160	5.7	7.5	100.0
.	671	23.9	MISSING	
TOTAL	2813	100.0	100.0	



VALID CASES 2142 MISSING CASES 671

Appendix J: Distribution of Students' High Level Perception of Reading Acquisition

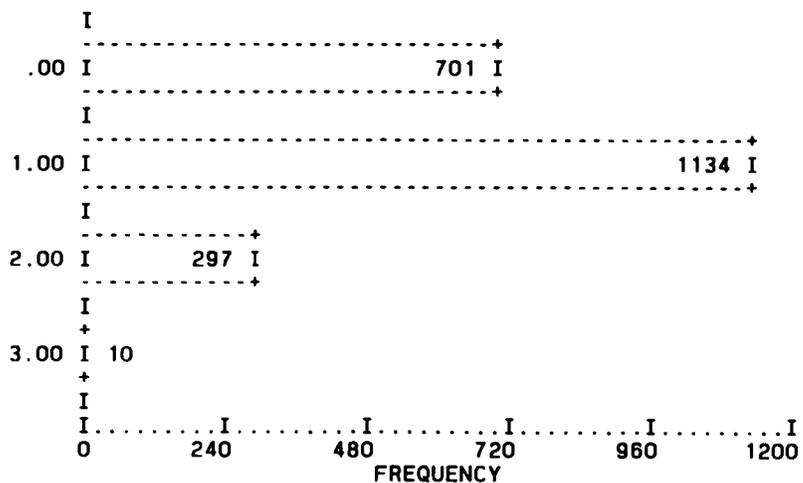
VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	849	30.2	39.6	39.6
1.00	1039	36.9	48.5	88.1
2.00	250	8.9	11.7	99.8
3.00	4	.1	.2	100.0
.	671	23.9	MISSING	
TOTAL	2813	100.0	100.0	



VALID CASES 2142 MISSING CASES 671

Appendix K: Distribution of Students' Low Level Perception of Reading Acquisition

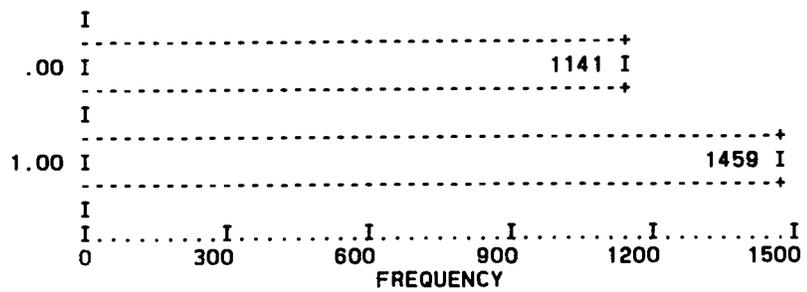
VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	701	24.9	32.7	32.7
1.00	1134	40.3	52.9	85.7
2.00	297	10.6	13.9	99.5
3.00	10	.4	.5	100.0
	671	23.9	MISSING	
TOTAL	2813	100.0	100.0	



VALID CASES 2142 MISSING CASES 671

Appendix L: Distribution of Students' Self-rating

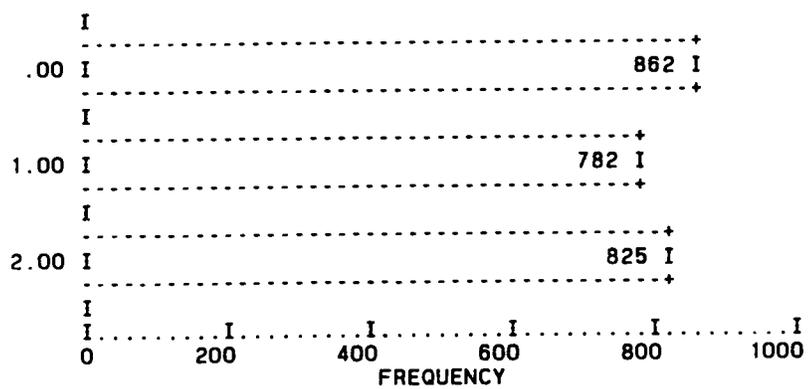
VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	1141	40.6	43.9	43.9
1.00	1459	51.9	56.1	100.0
.	213	7.6	MISSING	
TOTAL	2813	100.0	100.0	



VALID CASES 2600 MISSING CASES 213

Appendix M: Distribution of Students' Homework Intensity

VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
.00	862	30.6	34.9	34.9
1.00	782	27.8	31.7	66.6
2.00	825	29.3	33.4	100.0
.	344	12.2	MISSING	
TOTAL	2813	100.0	100.0	



VALID CASES 2469 MISSING CASES 344

Appendix N: Means, Standard Deviation, and Correlations of Reading Activities

	MEAN	STD DEV	CASES
ATACT01R	2.39282	1.98293	149
ATACT02R	2.58219	1.85976	148
ATACT03R	4.79139	.82051	151
ATACT04R	1.31833	1.51290	150
ATACT05R	1.59080	1.44862	149
ATACT06R	1.72862	1.88476	152
ATACT07R	2.58775	1.82919	151
ATACT08R	4.37864	1.37315	152
ATACT09R	1.54195	1.49550	149
ATACT10R	.97973	1.42123	148
ATACT11R	3.48833	1.78847	150
ATACT12R	.82867	.78951	150
ATACT13R	.43212	.80787	151
ATACT14R	.62919	.92125	149
ATACT15R	.49013	.55875	152
ATACT16R	1.47185	1.40948	151
ATACT17R	1.80333	1.46556	150
ATACT18R	2.32947	1.78228	151
ATACT19R	1.93500	1.68849	150
ATACT20R	2.99836	1.81075	152
ATACT21R	1.08757	1.20759	148
ATACT22R	2.09667	1.74321	150
ATACT23R	2.41500	1.80544	150
ATACT24R	.98013	1.23000	152
ATACT25R	1.80625	1.80318	152
ATACT26R	.75839	.99732	149
ATACT27R	3.60362	1.78591	152
ATACT28R	2.75497	1.84384	151

CORRELATION MATRIX:

	ATACT01R	ATACT02R	ATACT03R	ATACT04R	ATACT05R	ATACT06R	ATACT07R	ATACT08R	ATACT08R	ATACT08R	ATACT10R	ATACT11R	ATACT12R
ATACT01R	1.00000												
ATACT02R	.63236	1.00000											
ATACT03R	.06315	.06315	1.00000										
ATACT04R	.24809	.21047	.08899	1.00000									
ATACT05R	.07127	.03011	-.02289	.12035	1.00000								
ATACT06R	.17584	.14889	.08748	.32680	.12557	1.00000							
ATACT07R	.25985	.24004	.18708	.24742	.15540	.28159	1.00000						
ATACT08R	.15370	.09183	.14832	-.10362	-.06736	-.01498	-.02536	1.00000					
ATACT09R	.11315	.12788	.08575	.14213	.19679	.23507	.20430	.16467	1.00000				
ATACT10R	.33214	.25914	.07038	.30797	.08624	.10966	.22477	-.10327	.07999	1.00000			
ATACT11R	.09780	.18848	.13825	.08382	.10228	.04720	.05388	.15950	.21419	-.01377	1.00000		
ATACT12R	.29028	.31929	.14821	.01874	.21135	.14879	.18779	-.01837	.22184	.04508	.21730	1.00000	
ATACT13R	.04214	.10081	.12388	.10564	.34003	.09512	.20041	-.03789	.09352	.13116	.15092	.22356	1.00000
ATACT14R	.21328	.23304	.09577	.26944	.03247	.15495	.24201	.04391	.22645	.24714	.09268	.05456	.31385
ATACT15R	.27791	.19784	.09580	.21656	.24407	.30568	.27089	-.07748	.20635	.19568	.22019	.11886	.11758
ATACT16R	.15957	.14234	.12273	.18314	.16242	.20742	.15898	-.12889	.10532	.10088	.25144	.34579	.18649
ATACT17R	.11488	.14515	.12164	.25701	.16319	.19700	.15345	.02070	.35190	.05321	.20961	.19686	.20409
ATACT18R	.13250	.15545	.14010	-.01266	.05793	.19426	.20156	.02230	.27236	.00761	.23680	.28449	.20409
ATACT19R	.23414	.16241	.18004	.06890	.15459	.22125	.27943	.11246	.32562	.04424	.23680	.13437	.16829
ATACT20R	.02750	.13952	.11969	.07328	.10395	.16854	.16151	.16869	.20785	-.02183	.28449	.10168	.08690
ATACT21R	.23392	.22791	.03800	.25074	.26141	.21018	.27651	-.06744	.23049	.22976	.13354	.13706	.21066
ATACT22R	.32386	.26574	.11370	.22859	.13059	.28035	.27986	.05936	.36708	.21408	.13354	.12828	.21849
ATACT23R	.18124	.13877	.07732	.17894	.03418	.23346	.20235	.16327	.26705	-.01584	.12828	.08690	.21849
ATACT24R	.12549	.13194	.10428	-.08746	-.03473	.10820	.18851	.14370	.28263	.00183	.13706	.08690	.21849
ATACT25R	.26459	.17127	.08342	.16081	.11478	.24716	.23356	-.02346	.30535	.03926	.21790	.24190	.11143
ATACT26R	.08538	.11116	.00781	.15444	.07102	.25887	.18905	-.05564	.15195	.08423	.09205	.11143	.11524
ATACT27R	.06817	.10830	.20704	.15039	.10455	.35196	.24076	.02765	.20394	.01953	.21849	.11524	.23888
ATACT28R	.21023	.24444	.10695	.18641	.18324	.35621	.28857	.07410	.28114	.10119	.23078	.23888	.23888

Appendix O: Means, Standard Deviation, and Correlations of Instructional Strategies

	MEAN	STD DEV	CASES	ATSTR01R	ATSTR02R	ATSTR03R	ATSTR04R	ATSTR05R	ATSTR06R	ATSTR07R	ATSTR08R	ATSTR09R	ATSTR10R	ATSTR11R	ATSTR12R	
ATSTR01R	3.49486	1.86376	148	1.00000												
ATSTR02R	1.84075	1.75853	148	.37921	1.00000											
ATSTR03R	1.81376	2.10895	149	.18399	.22822	1.00000										
ATSTR04R	.82958	1.57861	142	.14388	.17289	.05731	1.00000									
ATSTR05R	2.54730	1.85106	148	.19647	.21202	.03905	.33578	1.00000								
ATSTR06R	3.53378	1.78732	148	.26111	.28586	.22919	.22160	.59213	1.00000							
ATSTR07R	2.33741	1.83184	143	.24859	.23440	.18866	.30243	.47044	.52743	1.00000						
ATSTR08R	1.81913	1.63355	149	.25684	.31021	.11127	.24395	.26962	.31575	.46873	1.00000					
ATSTR09R	4.68624	1.00290	149	.06545	.08975	.08927	.10823	.04184	.10076	.01332	.06262	1.00000				
ATSTR10R	2.05782	2.11290	147	.19352	.19403	.64103	.12844	.03706	.13876	.11457	.05860	.12154	1.00000			
ATSTR11R	4.18027	1.50048	147	.30692	.11834	.14814	.14026	.06205	.06801	.22131	.06394	.00146	.35114	1.00000		
ATSTR12R	2.67282	1.78624	149	.23311	.29209	.32865	.07374	.07289	.10645	.30523	.18942	.12855	.38965	.40261	1.00000	
ATSTR13R	2.95777	1.94431	146	.37523	.25154	.34640	.28813	.06971	.20423	.22909	.26702	.11869	.25538	.19879	.24042	1.00000
ATFRTE1R	72.87945	59.58618	146	.13545	.02143	.11046	.08066	.16184	.20047	.09419	.12749	.00473	.00262	.18066	.03435	.07012
ATFRTE2R	31.02041	31.25585	147	.17879	.16636	.17005	.31140	.41382	.30912	.30612	.16233	.12409	.10410	.17512	.18066	.07012
ATFRTE3R	22.89116	27.55706	147	.06338	.24915	.17809	.00010	.04681	.04814	.14409	.16286	.06148	.20095	.14976	.23782	.23782

CORRELATION MATRIX:

	ATSTR01R	ATSTR02R	ATSTR03R	ATSTR04R	ATSTR05R	ATSTR06R	ATSTR07R	ATSTR08R	ATSTR09R	ATSTR10R	ATSTR11R	ATSTR12R
ATSTR01R	1.00000											
ATSTR02R	.37921	1.00000										
ATSTR03R	.18399	.22822	1.00000									
ATSTR04R	.14388	.17289	.05731	1.00000								
ATSTR05R	.19647	.21202	.03905	.33578	1.00000							
ATSTR06R	.26111	.28586	.22919	.22160	.59213	1.00000						
ATSTR07R	.24859	.23440	.18866	.30243	.47044	.52743	1.00000					
ATSTR08R	.25684	.31021	.11127	.24395	.26962	.31575	.46873	1.00000				
ATSTR09R	.06545	.08975	.08927	.10823	.04184	.10076	.01332	.06262	1.00000			
ATSTR10R	.19352	.19403	.64103	.12844	.03706	.13876	.11457	.05860	.12154	1.00000		
ATSTR11R	.30692	.11834	.14814	.14026	.06205	.06801	.22131	.06394	.00146	.35114	1.00000	
ATSTR12R	.23311	.29209	.32865	.07374	.07289	.10645	.30523	.18942	.12855	.38965	.40261	1.00000
ATSTR13R	.37523	.25154	.34640	.28813	.06971	.20423	.22909	.26702	.11869	.25538	.19879	.24042
ATFRTE1R	.13545	.02143	.11046	.08066	.16184	.20047	.09419	.12749	.00473	.00262	.18066	.03435
ATFRTE2R	.17879	.16636	.17005	.31140	.41382	.30912	.30612	.16233	.12409	.10410	.17512	.18066
ATFRTE3R	.06338	.24915	.17809	.00010	.04681	.04814	.14409	.16286	.06148	.20095	.14976	.23782

Appendix P: Means, Standard Deviation, and Correlations of Reading Instruction

	MEAN	STD DEV	CASES
ATVIE01R	3.95333	.88292	150
ATVIE02R	1.98000	.78517	150
ATVIE03R	4.28859	.80820	149
ATVIE04R	1.62914	.82863	151
ATVIE05R	3.92000	.80195	150
ATVIE06R	1.48322	.71717	149
ATVIE07R	4.38411	.82088	151
ATVIE08R	2.08000	1.02076	150
ATVIE09R	2.48667	.95119	150
ATVIE10R	4.37748	.84205	151
ATVIE11R	4.31788	.88318	151
ATVIE12R	3.94000	.94133	150
ATVIE13R	3.99338	.71620	151
ATVIE14R	4.25188	.82351	151
ATVIE15R	2.57333	1.09513	150
ATVIE16R	3.99333	.78539	150
ATVIE17R	1.40667	.74813	150
ATVIE18R	3.81457	.78462	151
ATVIE19R	3.51007	.95768	149
ATVIE20R	2.05960	.94134	151
ATVIE21R	1.45033	.82094	151
ATVIE22R	2.57333	.89259	150
ATVIE23R	3.15333	1.02398	150
ATVIE24R	4.40000	.82178	150
ATVIE25R	4.30000	.78748	150
ATVIE26R	1.93960	.84891	149

CORRELATION MATRIX:

	ATVIE01R	ATVIE02R	ATVIE03R	ATVIE04R	ATVIE05R	ATVIE06R	ATVIE07R	ATVIE08R	ATVIE09R	ATVIE10R	ATVIE11R	ATVIE12R
ATVIE01R	1.00000											
ATVIE02R	.04721	1.00000										
ATVIE03R	-.02762	.10946	1.00000									
ATVIE04R	.13546	.23552	.07104	1.00000								
ATVIE05R	-.00624	.12077	.07209	.30206	1.00000							
ATVIE06R	-.02146	.18990	.07392	.00488	-.10222	1.00000						
ATVIE07R	-.00494	.12055	.08555	.05618	.01036	.15177	1.00000					
ATVIE08R	.10550	.25570	.06891	.23234	.17545	.07098	.09291	1.00000				
ATVIE09R	.39396	-.10124	-.01092	-.12065	.23407	.06292	.08561	.09428	1.00000			
ATVIE10R	.16732	-.10578	.23676	-.06551	.05403	.16480	.17776	.11916	.36182	1.00000		
ATVIE11R	.30839	-.00106	.23209	-.08695	.07256	-.22256	-.04363	-.07812	.47725	.43059	1.00000	
ATVIE12R	.03201	-.04642	.10744	-.00407	.10175	-.22798	.16996	.01462	.17479	.10838	.25948	1.00000
ATVIE13R	.48223	.03776	.05474	.01996	.14788	-.04833	-.05377	.08511	.42561	.18198	.30390	.28446
ATVIE14R	.26075	.24270	.01267	.04074	.22925	.08005	-.09884	.11927	.15995	.22312	.28446	.21027
ATVIE15R	.25824	-.01032	.13589	-.16370	.19499	-.14426	-.05655	.12577	.31403	.29048	.06147	.02135
ATVIE16R	.01877	.32104	.04595	.10885	.10729	.25811	-.04851	.06725	.11805	-.08355	.18121	.31052
ATVIE17R	.21764	.07842	-.02990	.12631	.27616	-.06312	.00761	.15664	.01798	.25225	.18121	.31052
ATVIE18R	.41291	.07341	-.01795	-.01998	.25553	-.06856	-.11207	.14987	.06789	.47985	.20044	.42204
ATVIE19R	.07530	.27376	-.14412	.20309	.13522	.30941	-.02065	.05041	.21611	.14394	.22265	.25252
ATVIE20R	.05058	.25759	-.20217	.09132	.01878	.20620	-.10346	.06065	.19496	-.17377	.17707	.16575
ATVIE21R	.18986	.16429	.19013	.08390	.27148	-.04413	-.06808	.01068	.29522	.14609	.00045	.02819
ATVIE22R	.01495	.02657	-.16439	.01100	-.04798	.09169	.02519	-.01479	-.02688	-.01567	.10550	.01799
ATVIE23R	.15401	.14886	.05032	-.16824	.03697	-.05751	.11746	-.01520	-.06469	.24860	.12633	.12779
ATVIE24R	.27776	.00951	.13483	-.17157	-.05528	-.09666	.10952	-.00015	.03866	.29411	.44517	.30150
ATVIE25R	.01440	.06657	-.01845	.11703	.04198	.07403	.06076	.17733	.11824	-.09025	-.10695	-.10936

	ATVIE13R	ATVIE14R	ATVIE15R	ATVIE16R	ATVIE17R	ATVIE18R	ATVIE19R	ATVIE20R	ATVIE21R	ATVIE22R	ATVIE23R	ATVIE24R
ATVIE13R	1.00000											
ATVIE14R	.16792	1.00000										
ATVIE15R	-.02837	.23194	1.00000									
ATVIE16R	.08220	.19330	.12515	1.00000								
ATVIE17R	-.03143	.01630	.09199	.17717	1.00000							
ATVIE18R	.10186	.34215	.21956	.17117	.06210	1.00000						
ATVIE19R	.03323	.41241	.41870	.30243	.00829	.38674	1.00000					
ATVIE20R	-.14380	.03966	.00101	.17508	.31663	.09380	.00073	1.00000				
ATVIE21R	-.16864	-.01413	.08607	.15374	.29839	-.07185	.00344	.43267	1.00000			
ATVIE22R	-.00867	.26314	.19418	.15886	.00058	.19125	.07216	.17322	.13575	1.00000		
ATVIE23R	-.10489	.04102	.10017	.11174	.04231	.03470	.01552	.20627	.16926	.10377	1.00000	
ATVIE24R	.22507	.27634	-.03340	.04423	.01941	.12891	.12865	-.11416	-.36649	-.13329	-.00546	1.00000
ATVIE25R	.11859	.24632	.05292	.17116	-.02339	.14818	.20410	-.01489	-.20052	-.10530	-.04547	.53181
ATVIE26R	-.00065	.03999	-.05483	-.02988	.20137	-.00616	-.09934	.10217	.28384	.09646	.07037	.16212

ATVIE25R ATVIE26R

ATVIE25R 1.00000
 ATVIE26R -.23642 1.00000

KAISER-MEYER-OLKIN MEASURE OF SAMPLING ADEQUACY = .71604

BARTLETT TEST OF SPHERICITY = 893.43009, SIGNIFICANCE = .00000

Appendix Q: Means, Standard Deviation, and Correlations of Assessment Methods

	MEAN	STD DEV	CASES	LABEL	ATMETH1R	ATMETH2R	ATMETH3R	ATMETH4R	ATMETH5R	ATMETH6R	ATMETH7R	ATMETH8R	ATMETH9R	ATASME1R	ATASME2R	ATASME3R
ATMETH1R	24.29530	8.18320	149		1.00000											
ATMETH2R	5.08722	8.32093	144		.12381	1.00000										
ATMETH3R	7.62162	10.67185	148		.02982	.18115	1.00000									
ATMETH4R	2.45333	5.03054	150		.05360	.28408	.07263	1.00000								
ATMETH5R	16.23288	10.87237	146		.19298	.08837	-.28737	-.03499	1.00000							
ATMETH6R	6.01342	7.58158	149		.07148	.24942	-.00858	.05599	.18049	1.00000						
ATMETH7R	27.14286	6.83763	147		.16336	.06431	.07700	.01858	.43699	.18929	1.00000					
ATMETH8R	15.55102	11.10703	147		.16293	.13248	-.25033	-.03318	.16083	-.02987	.30922	1.00000				
ATMETH9R	2.98649	5.45345	148		.10008	.17222	.45201	.19107	.09229	-.04144	.04775	.08920	1.00000			
ATASME1R	3.50000	8.46871	144		.10008	.22151	.34748	.33273	.09229	-.04144	-.01321	.13175	.21143	1.00000		
ATASME2R	24.94595	8.80804	148		.68661	.20430	.11580	.08633	.19750	.13175	.21528	.19022	.08920	.13012	1.00000	
ATASME3R	12.39458	10.50081	147		.14735	.11031	-.29365	.11143	.25676	.16978	.21539	.39633	-.03627	-.09009	.28526	1.00000
ATASME4R	25.58389	8.57443	149		.26881	.06186	-.03560	.13368	.25911	.02438	.27821	.22811	.03381	.02796	.26036	.25460
ATASME5R	26.05405	8.29629	148		.31463	.08756	.05818	.12413	.09963	.07473	.21918	.14032	.05618	.16623	.40384	.13665
ATASME6R	20.31293	10.86328	147		.16789	.14530	.04205	.11842	.17411	.09096	.17515	.14843	-.01479	.10757	.16510	.25680

CORRELATION MATRIX:

ATMETH1R ATMETH2R ATMETH3R ATMETH4R ATMETH5R ATMETH6R ATMETH7R ATMETH8R ATMETH9R ATASME1R ATASME2R ATASME3R

ATASME4R ATASME5R ATASME6R
 1.00000
 .46139 1.00000

Appendix R: Means, Standard Deviation, and Correlations of Assessment Focus

	MEAN	STD DEV	CASES	LABEL
ATAREO1R	17.02041	11.31455	147	
ATAREO2R	17.02703	11.56883	148	
ATAREO3R	21.84626	10.59208	147	
ATAREO4R	18.53793	10.99765	145	
ATAREO5R	18.87671	11.24456	146	
ATAREO6R	20.75000	10.80814	144	
ATAREO7R	15.55102	11.31554	147	
ATAREO8R	12.86111	10.37142	144	
ATAREO9R	18.64865	11.40784	148	
ATARE10R	17.93243	11.53294	148	

	ATAREO1R	ATAREO2R	ATAREO3R	ATAREO4R	ATAREO5R	ATAREO6R	ATAREO7R	ATAREO8R	ATAREO9R	ATARE10R
ATAREO1R	1.00000									
ATAREO2R	.78013	1.00000								
ATAREO3R	.47007	.60531	1.00000							
ATAREO4R	.14313	.20612	.28703	1.00000						
ATAREO5R	.12803	.29437	.38135	.53010	1.00000					
ATAREO6R	.40400	.44304	.45515	.32935	.36926	1.00000				
ATAREO7R	.35824	.43669	.42237	.12428	.12796	.47220	1.00000			
ATAREO8R	.31820	.40238	.31383	.22524	.31895	.42296	.47940	1.00000		
ATAREO9R	.25390	.21230	.25698	.40089	.36205	.26653	.22504	.23384	1.00000	
ATARE10R	.51049	.52096	.48331	.18072	.11858	.36996	.59049	.32505	.35464	1.00000

CORRELATION MATRIX:

KAISER-MEYER-OLKIN MEASURE OF SAMPLING ADEQUACY = .80438

BARTLETT TEST OF SPHERICITY = 558.56697, SIGNIFICANCE = .00000

Appendix S: Means and Standard Deviations of Second-Order Factors

Variable	Mean	Standard Deviaton
InterStr	.008	1.011
BasCon	.001	1.012
DirIn	.004	1.009
ImSup	.110	1.008
HolIm	-.005	1.012
SysPro	-.012	1.002
OpCont	.004	1.012
ClCon	-.004	1.012
NarOb	.008	1.007
BdSub	.006	1.010

Appendix T: Means and Standard Deviations of Teacher Background Variables

Variable	Actual Min-Max Range	Mean	Standard Deviation
Texts	1 - 5	3.99	1.49
ESL students	0 - 22	2.61	4.26
Principal engagement	0 - 3	1.87	.83
Professional reading	.06 - 8	4.87	1.72
Casual reading	.06 - 8	3.36	1.59
Preservice training	2 - 7	4.43	.91
Postsecondary education	2 - 11	4.62	1.31
Study of reading	1 - 6	3.64	1.78
Years teaching	1 - 42	14.11	9.32
Comprehension	1 - 5	2.88	1.11
Critical thinking	1 - 5	3.38	1.04
Enjoyment	1 - 5	2.25	1.15

Appendix U: Means and Standard Deviations of Student Reading Experience Variables

Measure	Actual Min-Max Range	Mean	Standard Deviation
Homework intensity	0 - 100	66.99	29.57
Self rating	0 - 100	43.55	17.53
Voluntary reading	0 - 60	18.55	5.17
Reading interactions out-of-school	0 - 12	6.18	1.25
School reading	4 - 40	18.22	5.24
Affective perception of reading acquisition	0 - 3	1.45	.24
Low level perception of reading acquisition	0 - 3	.82	.22
High level perception of reading acquisition	0 - 3	.72	.21

Appendix V: Request for Permission to Use Information from IEA Reading Literacy Study

February 28, 1995

Mr. Ron West
Assistant Director
Examination & Assessment Branch
BC Ministry of Education
617 Government Street
Victoria, BC V8V 2M4

Re: Permission to use information from IEA Reading-Literacy Study

Dear Mr. West:

As a doctoral student at UBC I had the opportunity to assist Dr. Victor Froese with various aspects of the IEA Reading-Literacy Study for which he received grants/contracts from the Ministry (X90/045, X91/1089, X94/0249, etc.). As we got into the project I became interested in teachers' personal practical knowledge of reading instruction and its relationship to teacher background, their students' reading experiences and achievement, and he suggested that some factor analytic work might produce information of interest. It was done and I would like to use a portion of it for my doctoral dissertation for which Dr. Froese is also my advisor.

You may be assured that there will be complete confidentiality since in fact the participating schools were the only ones that ever had a key to the name/code encrypting. My study would use only certain items related to my topic from the teacher and student questionnaires for Population A.

In accordance with the usual formalities, I would request permission to use these findings for my doctoral dissertation, and would be pleased to share my findings with you.

Sincerely,

Marlene Asselin
Doctoral Student

Appendix W: Permission to Use Information from IEA Reading Literacy Study



Province of
British Columbia

Ministry of
Education
EXAMINATIONS BRANCH

Parliament Buildings
Victoria
British Columbia
V8V 2M4

March 7, 1995

Marlene Asselin
Doctoral Student
Department of Language Education
The University of British Columbia
2125 Main Mall
Vancouver, BC
V6T 1Z4

Dear Marlene Asselin:

Permission to use the findings from the IEA Reading-Literacy Study as outlined in your request dated February 28, 1995 is granted. I discussed the issue of privacy with Dr. Froese and he has assured me that there will be no way to identify either teachers or schools in your study.

I would be very interested in seeing your findings. Good luck in your study.

Yours truly,

A handwritten signature in cursive script that reads "R. F. West".

R.F. West
A/Assistant Director
Examinations and Assessment Branch