

WHOLE LANGUAGE IMPLEMENTATION: THE IMPACT ON
GRADE ONE TEACHERS AND STUDENTS

CENTRE FOR NEWFOUNDLAND STUDIES

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WHOLE LANGUAGE IMPLEMENTATION: THE IMPACT ON GRADE ONE
TEACHERS AND STUDENTS



by

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ABSTRACT

The present study investigated the implementation of the Nelson Networks language arts program, a whole language approach to the teaching of language arts. Specifically, the investigation was two-fold: to investigate the relationship between teacher experience with whole language instruction and student achievement in reading comprehension, vocabulary, and writing, and to investigate how each teacher responded to the implementation of the program.

Three classes comprised of 69 grade one students were selected from three schools in the Deer Lake Integrated School Board. The classes were identified by the Primary Language Arts Coordinator on the basis of teacher experience with whole language instruction. Each of the three teachers in the study had a different background in the whole language approach to teaching language arts.

The student component of the study involved pretesting in November 1988 and posttesting in April 1989. The teacher component involved a case study of each teacher in an attempt to determine the satisfaction/dissatisfaction level with the Networks program.

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CHAPTER I

THE STUDY

The purpose of this study was to investigate the implementation of the grade one language arts program introduced in Newfoundland schools in September 1988. The study is focussed on two aspects--the impact of the new curriculum on teachers and the translation of that impact to students. Three grade one classrooms were the object of the study. These classrooms were selected because the teachers had different backgrounds in the philosophy and practice of the whole language approach.

The most experienced teacher in the whole language approach had several years teaching language arts from that perspective and was viewed as having an adequate background. A second teacher had a minimal exposure to the whole language approach having gained most of the experience with it in the school year 1987-88. However, the third teacher was teaching the whole language curriculum for the first time. The language arts experience for this teacher was restricted to the basal program.

The Problem

Introduction

Throughout the 1980's the Department of Education for Newfoundland and Labrador evolved a philosophy of language arts education which it claims was based on "the

understanding of what is known about children, what is known about language, and the way language functions in children's lives" (Experiencing Language, 1988, p. 1). Experiencing Language is the definitive statement of this philosophy.

To reflect this philosophy, the Department adopted Nelson Canada's Networks program for use in grade one which was introduced to the schools in September 1988. According to the Primary Education consultant, Department of Education, the program was neither piloted nor field tested, although selected grade one teachers throughout the province, along with primary or language arts coordinators, had some input into the selection of the program.

The program, based on the whole language philosophy, is a departure from the traditional skills approach characteristic of the basal reader program which was in use in most schools across the province before September 1988. This major shift in philosophy brought with it a number of changes for teachers and the classroom environment. Most teachers across the province, however, are approaching this new curriculum with a weak background in the underlying philosophy of the program and with little practical experience with such an approach. Yet, there are a few teachers who have a rich background in both the philosophy and practice.

A crucial factor in the worth of any new program is implementation. Therefore, in order for this whole language approach to be a success it had to be implemented in the manner necessary to capture the philosophy underlying it. In the past, many innovations have been discontinued not

because of their value but simply because implementation was overlooked. A program cannot work if it is not skillfully implemented.

An important cog in the wheel of implementation is the support and trust of parents, teachers, and administrators. Changing from the traditional basal reader classroom to the whole language environment is a dramatic shift. Moving away from the basal reader approach, a structured and clearly defined program, to one which encourages teachers to structure much of the program on their own, creates unease. Therefore, teachers may need greater support. As well, parents and administrators need to be shown evidence that learning is taking place.

Teacher satisfaction level is a major component in the success of a program. However, there are many factors which determine that satisfaction level. Teacher knowledge of the program generally determines the attitude toward that program which in turn plays a role in the satisfaction level. Other important factors include materials, staff development, administrative support, explicitness of the program, and the degree of change from the previous program.

Background to the Problem

The Basal Reader Tradition

Experiencing Language (1988), the primary language guide for Newfoundland, highlights the approach to reading from the basal perspective in the following statement:

Research shows that before the late 1960's learning to read was viewed as a collection of separate skills that needed to be taught to all children in a particular sequence. The synthetic phonics method by which children were taught the letter-sound relationship in isolation and then asked to blend the sounds to form new words prevailed in many primary classrooms. The assumption was that children learned to read bit by bit, putting bits together to get a whole. . . . There were classrooms which used either phonics or "look-say" but if the methods were used separately or together the basic premise was the same: string the bits and pieces together to make words and sentences. (p. 3.16)

The Grounds for Change

Throughout the 1960's and 1970's three important research findings have influenced the move away from the skills approach to reading and writing. According to Goodman (1987), research has shown that children know a lot about written language before they come to school. They know the written form is learned in the same way in which they learn the oral language. Also, they know the reasons for learning both--to communicate and understand. Goodman pointed out, "If what students are expected to read is meaningful, functional, and relevant, they'll learn it easily and well" (p. 64).

The second important finding in the research indicates that the knowledge children have before they read, strongly influences how much they will understand when they read. A third finding shows that reading and writing are interdependent.

Out of these findings and other related research has grown a discontentment with the skills approach. The basal reader programs have become the target of much criticism from authorities in the field. A discussion of the major criticisms of the use of basal readers by recognized authorities such as Goodman (1986), Holdaway (1979), Huck (1977), and Newman (1985), follows.

The basal reader approach of isolating parts of the language such as letters, letter-sound relationships, word and sentence fragments, misguides the reader. From this approach, reading is seen as a naming activity instead of an exercise in retrieving meaning from the whole as is the case when working with stories and expository passages. Criticism is levelled as well at the sequencing of skills which does not foster the proper use of these skills to assist in fruitful learning situations.

Basal readers, according to the critics, often create artificial language passages by controlling vocabulary or by building around specific phonic relationships or word-attack skills. Readability formulas are also used to find selections written to a specific reading level thus creating artificial texts.

Skills instruction in the basal reader program shortens the time available for reading. One of the culprits of time consumption is the workbook. In the report Becoming a Nation of Readers by Anderson, Hiebert, Scott, and Wilkenson (1985), it is claimed that up to seventy percent of allotted reading

time is spent in independent reading practice and seatwork. Most of that time is spent on workbook and skill sheets directly related to the basal program in use, leaving little time for the independent reading of children's literature.

The basal reader approach is also criticized for tampering with children's literature. It is claimed that the literature is often changed by simplifying the vocabulary or by rewriting the selections to accommodate the development of particular skills. As well, editors of the basal readers often choose short selections of children's literature which interfere with the context of the original.

Critics of the skills approach argue that the writing process is also treated unjustly by that approach. Traditionally, writing was taught after the child had acquired the basics of reading. The ability to spell commonly used words often functioned as the bench mark for beginning writing. Beebe (1988) outlined the traditional sequence of the teaching of reading. Letter formation was taught following the introduction of the alphabet and the associated sounds in kindergarten and grade one. The learning of letters led to the construction of words which in turn led to writing partial sentences as children answered questions in workbooks or on worksheets. Finally, sentences were taught and stories were attempted. Little attention was given to the message in the writing; instead, emphasis was placed on correct spelling, handwriting, punctuation, and capitalization. As children progressed through the

elementary grades more emphasis was placed on these skills.

According to the experts such as Graves, Murray, and Parker (cited in Beebe, 1988), students graduating from high school do not know how to write. The reasons are varied but the major causes, they believe, are as follows:

1. The writing process is not stressed in the manner that is necessary for successful writing experiences. The two main ingredients of the process, thinking and revising, are generally not given the emphasis they require.

2. The process is often ignored in favour of the product. As a result the process of writing is not taught in the classroom.

3. Opportunities for writing in the classroom are not sufficient to develop writing skills.

4. There is a lack of teacher training in the field of teaching writing.

5. It is only recently that the complementary relationship between reading and writing has received some consideration. The importance of early involvement of children in reading and writing was also overlooked.

What, then, is the alternative to the skills approach to reading and writing? The research has led to the concept of the whole language approach. This integrated approach which is now the policy of many education departments is also the policy of the Newfoundland Department of Education.

The Alternative

To give a clear definition of whole language is rather difficult, if not impossible. In the view of Alkwerger, Edelsky, and Flores (1987), "whole language is not a practice. It is a set of beliefs, a perspective. It must become practice but is not the practice itself" (p. 145). In the words of Goodman (cited in Alkwerger et al.), "a whole language program is an educational program conducted by whole language teachers" (p. 145). Newman (1985) viewed whole language not as an instructional approach but a philosophical stance.

Regardless of definition, there is a basic rationale underlying the whole language approach. Several things are involved (Anderson, 1984). Central to the approach is comprehension with all learning making sense to the child. The child's language and experience should determine where learning is to take place. The learning of the child should be language based, and related to thinking and experience.

Goodman (1986) believed that people are born with a capacity and a need to communicate with others. This is the basis for language development. Children appear to learn language easily before entering school; however, that ease often appears to dwindle in the school's environment. School curriculum, according to Goodman, seems to hinder language development. Language, fractionated into pieces with no real purpose is artificial. Real and natural language that

is whole and interesting turns language learning into an exciting and motivating experience.

In comparing the skills approach and the whole language approach, advocates of whole language point out a major advantage of their approach. In the primary grades especially, the classroom environment is structured as much as possible to be congruent with that at home. The premise here is that children need an environment which extends the natural environment that they encounter before entering school--the natural environment in which they learn to speak and hopefully will learn to read and write as well. School becomes an extension of the home instead of some strange environment in which children are presented with fractionated skills as a means of learning to read and write.

Another advantage, according to whole language advocates, is that skills instruction is content based. When an opportunity arises for the teacher to focus on a particular skill it is done so but always in conjunction with the content of the story or piece of writing the students are involved with.

The whole language approach recognizes that children enter school with different levels of ability and background. Therefore, there are no rigid expectations for a particular grade level. Children are taken from where they are to further growth in language. The environment is one of print, including poetry, captions, children's own writing, trade books, big books, and predictable books. Student interaction is a major focus of the classroom. Activities are many and varied.

The Primary Program in Newfoundland

The Department of Education's policy statement (in Experiencing Language, 1988) stresses that a primary language arts program must consider how children learn language, recognize the importance of preschool language experience, and provide new experiences which promote children's abilities to listen, speak, write, and read. In addition, effective language arts teaching requires knowing what language arts are, how they interrelate, and how language and thought are a part of each.

The program in Newfoundland schools has three modules:

1. A Language Experience Module (the natural language of the child is used for reading and writing).
2. An Instructional Module (a selected instructional program (Nelson's Networks) assists the child in learning how to listen, speak, read and write).
3. A Literature Module (exposure to literature for the purpose of making readers of children) (Experiencing Language, p. 2.2).

Integral to the program is an on-going monitoring of children's strengths and weaknesses in language so that remediation or enrichment can be given as needed.

The policy statement claims that its philosophy is upheld by recent research in whole language which it defines as an approach to instruction which ensures that "language is purposefully and meaningfully used communication, learning, and enjoyment" (p. 6). To extend the definition, a list of

important factors which the whole language approach recognizes, and a list of changes which represent a shift from a skills-oriented approach to a whole language approach is provided. These lists are included as Appendix A.

The goals of the language arts curriculum are stated thus:

1. To assist children to move from an intuitive grasp of language to a more conscious control of language in all functional dimensions.

2. To help children acquire the language skills of listening, speaking, reading, and writing.

3. To have children realize that language is a tool of learning as well as a medium of communication.

4. To broaden children's experiences through literature and use literature to increase understanding of human behaviour.

5. To help develop in each child an understanding of self and others and an appreciation of the crucial role of language to that understanding.

6. To create classroom and school environments, rich in learning experiences and print, which will motivate and encourage children to use and produce language (p. 5). The curriculum is intended to be holistic, child-centred, developmental, process-oriented and responsive to children's needs.

The Research Questions

The following general research questions were examined by the study:

1. To what extent was student achievement dependent on their teacher's understanding of, and experience with, the whole language philosophy in implementing the primary program as set down by the Department of Education?

2. Were the grade one teachers satisfied with the new approach to teaching the primary language arts?

Supplementary Questions

The following specific questions arise from the two general questions above:

1. To what extent was student achievement in reading, writing, and vocabulary responsive to teacher experience with whole language in the primary grades when controlling for student achievement in reading at the beginning of grade one, age, and sex?

2. To what extent was teacher satisfaction/dissatisfaction with the new program responsive to the following implementation factors?

- (a) knowledge of, and experience with, whole language at the primary level;
- (b) availability of materials;
- (c) explicitness and complexity of the program;
- (d) inservice and staff development;
- (e) administrative support.

3. To what extent was teacher perception of their success in implementing the new program responsive to their knowledge of, and experience with, whole language at the primary level?

CHAPTER II

REVIEW OF RELATED LITERATURE

Whole Language

The Philosophy

The whole language approach to language arts grew primarily out of the psycholinguistic view which evolved through criticism of the traditional view, particularly that of reading. Wingfield, Rudorf, and Graham (1979) pointed out that it has become recognized only recently that there are established academic disciplines relevant to the reading process. These two disciplines, linguistics and psychology, have been combined and are now referred to as psycholinguistics. A definition of psycholinguistics is provided by Cooper and Petrosky (1976):

Psycholinguistics is not a method of teaching reading. It is the marriage of two sciences: the science of cognitive psychology and the science of linguistics. Cognitive psychology explores the workings of the human mind, linguistics explores the nature of human language. Unlike behavioristic psychology, cognitive psychology views learning as an active, selective process. Linguistics . . . classifies language into two major aspects: surface structure and deep structure. Surface structure is (for print) the visual configurations on the page. Deep structure is, simply, the meaning of what is printed on the page. (p. 185)

Basic to the philosophy of whole language is that reading and writing instruction should begin with whole and connected language because whole, undivided language is both

familiar and natural for children to learn (Revtzel and Hollingworth, 1988). The whole language philosophy does not view writing and reading as growing from the mastering of a number of skills which then create a whole. That is not to say that skills are not a concern. On the contrary, in the whole language approach, children develop control of skills through using written language. These self-developed skills are in great contrast to those skills associated with a structured reading and spelling program.

The components of language are not treated separately but instead are viewed as interrelated aspects of the language arts with each promoting the other. The interaction between reading, writing, and listening is emphasized by Newman (1985). Reading and writing is enriched through listening. Writing is enhanced through reading and vice versa. Talk, the fourth component of the whole language approach is fostered in the classroom through peer interaction and discussion. As well, the teacher-student conference is an excellent opportunity for question and discussion-- a positive factor in the language and reading process.

According to Newman (1985), writing is social. Students can become fluent writers if they are given the opportunity to write on topics of their own interest, for different purposes as well as for different audiences. Limiting students to specific topics dampens the writing spirit. Whole language allows children to decide for themselves what they want to write. This opens up a wide range of topics and purposes

available to them.

Beginning writers just as beginning readers in the whole language classroom are encouraged to take risks. One of the unique features of writing in the whole language program is invented spelling. The ability of young children to represent their ideas graphically was investigated by Read (1971, 1975). The invented spelling is one of the stages of spelling proposed by Beers and Henderson (1977). Children spell phonetically, inventing words which allow them to write at an early age with some success in communicating the intended message. An examination of samples of grade one writing may reveal "mit" for "might", "thndr" for "thunder" or "raind" for "rained." Research on this subject indicates that the ability to use the invented spelling concept begins around the age of five. The writer is free to use words that she/he needs to use rather than stick with words they are sure they can spell. This concept along with de-emphasizing neatness and accuracy in punctuation and other mechanics of writing allows for more freedom and encouragement for the writer. The young writer is not concerned only with the technical aspect of the writing but is allowed to concentrate on the intended message.

Farris and Kaczmariski (1988) stated, "Developing readers and writers need to be involved in writing events of their own and in reading a wide range of real, comprehensible books. Children must be in control of their reading development" (p. 78). The whole language environment provides the

beginning readers with predictable books which foster success for the young children in knowing where the book is going and what will happen next.

Children who are writing in literature-filled environments compared to that of a basal reader and the accompanying workbook pages learn to read at least as well as the other children. Yet at the same time, such children are learning to write (Graves, 1983). These claims were substantiated in a study by Smith (1989). The results of the Smith study indicated that children exposed to the whole language approach showed greater ability in writing than did children exposed to the basal reader approach. The reading comprehension of these children was comparable to that of children exposed to the basal approach.

Proponents of whole language generally reject the findings and traditional research methods of psychology and education. Instead, they support their view on the basis of ethnographic or descriptive investigations into how infants and children acquire their native language. Smith (1985) pointed out that these studies show that children acquire oral language naturally from society in which the whole, connected language is used. Holdaway (1979), a proponent of whole language theory, emphasized that reading and writing should be taught in a manner that parallels and complements early oral language learning. He insisted that few children would learn language in infancy if they were taught it in the same way as it is taught in school.

According to Downing and Leong (1982), children in their approach to learning to read and write are cognitively confused with the purposes and conventions of printed language. However, through exposure to a print-rich environment, they become familiar with meaningful printed materials and progress naturally. Children, then, extract from whole language used in the social context the necessary information to facilitate language acquisition and use. Newman (1986) suggested that learning to read and write should involve familiar language context and move toward the more unfamiliar language contexts of others. This premise is the basis for using children's own dictation and writing as a beginning.

Clay (1975), from her work with preschoolers in New Zealand, pointed out that young children begin to understand and use written language long before they receive any formal instruction. Experimenting with print allows the young child to develop an understanding of how print can be used to communicate different messages through rearranging letters and words. Other researchers such as Wiseman and Watson (1980) and Harste, Burke, and Woodward (1982) have also observed the ability of young children to understand the function of language through print.

The whole language approach embodies an awareness of the knowledge that young children bring to school. As a result, the school environment is structured accordingly so as to capitalize on this knowledge. The classroom is viewed as an extension of the home with children involved in writing as

early as kindergarten. Researchers such as Clarke (1976), Durkin (1966, 1970), and Torrey (1969) pointed to factors related to the environment of early readers. These include a variety of printed materials, the modelling of meaningful reading behaviour, and response to what the child is trying to do. The whole language philosophy recognizes these factors and in doing so provides the child with a rich print-filled environment such as children's literature, newspapers, magazines, maps, telephone directories and accounts of their own experiences. Anything that children show a desire to read is generally made available. In the classroom the teacher becomes the model for meaningful reading by reading daily to the class or having children relate their experience which is recorded in the written form as a means of showing that print is meaningful. Smith (1977) and Thorndike (1977) pointed to the importance of children responding to stories read aloud to them. As children read or try to grasp the meaning of a particular printed text, the teacher responds to their queries. Written responses are often given when responding to children's writing.

Revtzel and Hollingworth (1988) summarized the position of whole language proponents:

In short, whole language theorists assert that language learning progresses from the whole of language to an understanding of the parts. Language learning and use is largely based on intrinsic motivation or personal relevance rather than on extrinsic rewards and the proddings of others. And finally, whole language advocates are quick to point out that language is naturally learned from exposure and use rather than from instruction.

Teacher Reaction

According to Goodman (cited in Hunsberger and Maguire, 1988), when a teacher changes from the role of traditional teaching to whole language teaching the change is radical. The view that learning is always the result of teaching begins to change. Teachers, even though they see that children are reading and writing and are involved in activities which promote much learning, still are worried to some degree. The worry is grounded in the fact that they are not practising the things they did before and as a result are concerned that there may be a problem. Teachers are uncomfortable with this radical approach.

For the majority of teachers taking on whole language instruction for the first time, there are many fears and hesitations which often lead to resistance. Scribner (1988) outlined three factors which often cause concern and hesitations for new teachers of whole language:

1. The climate of change

When teachers are faced with legislated immediate change, there is a tendency to dig in and resist the change. Associated with this change is teacher perception that the experts are saying that teachers have been teaching the wrong way for years and are failures as teachers.

2. Unreasonable implementation process

Another concern of teachers is centred around the policy of some school boards regarding implementation. There appears to be a belief that teachers can convert to whole

language teaching without going through the necessary process. This results in poor staff development programs which do not allow teachers the opportunity to develop an understanding of the workings and rationale of the whole language approach. They are expected to change on faith alone as a result of being told by experts that whole language is good.

3. Myth of whole language

Teachers have been exposed to misconceptions about whole language which concern the degree of (a) teacher intervention, (b) structure, and (c) standardization of materials, topics, and activities.

A major misconception surrounding intervention is that teachers do not intervene but instead are to act as facilitators in providing the environment which promotes natural learning. This has led to the misconception that there are no teaching of skills in the whole language approach. The question should not address whether or not to intervene and teach skills but rather how and when to do so.

Since one criticism of the skills approach refers to the rigid structure of instruction, the whole language position is often seen as an unstructured approach; a misconception which creates concern for teachers. Another misconception is that whole language instruction entails no standardization of curriculum materials and activities. This notion evolves from the rigid standardization associated with the basal programs.

There are concerns, then, for teachers, especially those faced with the whole language approach for the first time. If such teachers have to grapple with any of the misconceptions discussed above, serious problems could develop in accepting and implementing the philosophy.

The Impact of Teachers on Reading and Writing

With the impact of teacher effects on student achievement in reading and writing being a major focus of this study, it is necessary to discuss what the literature and research has to say about this issue. The two areas of reading and writing will be discussed separately.

Reading

The whole language approach to reading does not break it into the subskills of comprehension and word recognition. Central to the theme of the approach is the emphasis on reading for meaning. According to Experiencing Language (1988):

Reading is not 'getting all the words right'. Reading is for meaning or it is a worthless activity. Research is not saying, however, that nothing should be taught, that children should not learn the alphabet or build up sight vocabularies or that the relationship between spelling words and their sounds should be concealed. But these are by-products of reading that make sense only as reading is mastered and understood. The search for meaning guides the recognition of words, and the use of phonic clues is needed to confirm predictions. Primary teachers must keep that perspective. (p. 3.17)

The whole language approach focusses attention on the fact that prior knowledge is important in finding meaning

from print. It is important, then, that before children read they should be encouraged to talk, listen, write, observe and think about the selection to be read. Goodman (1970), Weber (1970), and Emans (1969) recognized the importance of presenting children with text that is in some way connected with their experiences. Their research shows that young readers utilize semantic and syntactic context in an attempt to derive meaning from print. Presenting text that is connected with children's experiences allows them to use their language strengths to help decipher words.

A sight vocabulary, then, does not have to be acquired through the phonic drill method. Bridge, Winograd, and Healey (1983) found that sight words are better learned in the context of repetitive predictable books and language experience charts than in stilted basals. More target words were learned by the experimental group than the basal reader group.

In a more recent study carried out in British Columbia by Gunderson and Shapiro (1988) in a comparison of vocabulary generated by grade one students in two whole language classrooms and the vocabulary contained in a basal reader program, the whole language approach fared well. The high frequency vocabulary generated was nearly identical for whole language and basal readers. Low frequency words used, however, were judged to be more current than those of the basal readers. Further findings suggested that whole language programs result in acquisition of phonic skills and the application

of these skills in spelling. It appears, then, that the teaching of reading from the whole language perspective entails not only meaning from the print but in doing so guides children in developing a sight vocabulary as well. What role, then, does the teacher serve?

Discussion on the quality reading teacher has been on-going for decades. According to Lass (1981), "'It's the teacher not the method that makes the difference', has become something of a cliché among reading educators" (p. 28). The importance of the teacher in reading instruction was studied by Arthur Gates as early as 1957 according to Lass. His study investigated the best age to begin reading lessons. The results pointed to the teacher as the determining factor rather than the student ability. The study found that children at a mental age of 5.5 could profit from an inexperienced teacher. On the other hand, a mental age of 7.0 was necessary in order to profit from an inexperienced inefficient teacher. The study at that time, according to Lass, was virtually ignored. In recent years, however, with teacher accountability in the spotlight, interest is focussed on the quality of the reading teacher. In other words, teacher effectiveness.

From the whole language perspective the teacher, indeed, is important to the successful teaching of reading. Goodman (1987), an authority on whole language, emphasized the role of the teacher: "Based on the latest reading research, this approach tries to integrate, not fragment the reading process. And it acknowledges the skill and intuition of teachers as

critical" (p. 64). Altwerger, Edelsky, and Flores (1987) identified, as well, crucial characteristics of whole language teachers. They see them as sensitive to the needs of children and as a result vary their approach with different children for different purposes. Effective whole language teachers blend practice and theory.

Experiencing Language (1988) states that teachers involved with the responsibility of teaching young children the act of reading "need an informed understanding of the reading process" (p. 3.15). It further states:

Their skill with instructional techniques, strategies, and materials must be grounded on, and flow from, the following fundamental principles of reading:
 Effective reading instruction applies reliable and recent research about reading to generate classroom practices. Effective reading instruction recognizes that the whole child learns to read. Reading should begin with the natural language of the child. Children's experience and oral language should be used for the creation of personal reading materials. The reading program in the primary school should have a distinct instructional focus. Learning to read is a major goal of the "primary school."
 The literature component of the language program in the primary school leads to successful independent reading. (p. 3.15)

According to Singer (stated in Lass, 1981), it is the teacher within an effective reading program that makes the difference. While that may be true, it appears that the role of the teacher in reading instruction may be the most crucial factor. Without an effective teacher the reading program, regardless of its effectiveness, may never get off

the ground. This is recognized by Gunderson and Shapiro (1988). They pointed to the need for teacher awareness "of the need for patience and the amount of individual planning and student contact necessary for the successful implementation of a whole language program" (p. 45). V. Goodman (1987), as well, emphasized the role of the teacher:

The master teacher is an artist who sensitively combines the best elements from an informed knowledge of both phonics and semantics to seduce the novice reader into a love affair with books which engenders hope and maintains the awareness of possibility until the reader is able to become a connoisseur. (p. 105)

Writing

The whole language approach to writing emphasizes writing processes. Graves (1988) pointed out that the writing-process approach to teaching first of all considers what children know, then deal with the conventions that will allow them to share their meaning with others. The process, according to Graves (1984), encompasses three phases: prewriting, composing, and postwriting. The prewriting phase is what actually leads to the writing. It could be a drawing or a discussion on some topic of interest. The composing is the writing of the message. Examples of actions in this phase include use of resources, student interaction, proofreading and teacher participation. The postwriting phase refers to actions taken after the first composing. These actions could include proofreading, the seeking of approval from others and

planning the finished product. Tremmel (1987) viewed the writing process in much the same light. The objectives of the process according to Tremmel involve four stages: inventing, drafting, revising, and editing.

Experiencing Language (1988) states:

Research over the past decade and practical experience with young writers suggest that the following key elements are necessary to develop a sound primary writing program:

- supportive, language rich environment;
- teachers who demonstrate, observe, conference and commend. (p. 3.44)

Teacher demonstration is an important factor in the teaching of writing to young children. The teacher model concept has a major influence. According to Graves (1984), writing models do not exist for most children, in school or out. Most children see adults read and speak but rarely do they see them write. Graves (1983) recognized the importance of the writing model when he stated, "The writing teacher, like the pottery teacher, must practise the craft along side students" (p. 8).

The major portion of the responsibility for the writing process and the achievement of children in that process rests with the teacher. From this perspective the teacher may be viewed as the "maker" or the "breaker." Graves (1988) pointed out that one of the essential principles for effective teaching of writing is that "the teacher provides a highly structured classroom" (p. 9). He further stated:

. . . I think that if teachers understand the following four components, their writing programs will serve children well. These components are adequate provision of

time, child choice of topic, responsive teaching and the establishment of a classroom community: a community that has learned to help itself. (p. 9)

The teacher, then, must have an awareness of writing research and theory and be able to apply it to their teaching of writing if students are to become effective writers. Yet, recent surveys of writing instruction according to Zamel (1987) "seem to indicate that process research is not informing or transforming pedagogy" (p. 699). Hairston (1982) claimed that even though there is a shift in the view on composition, teachers of writing still stick to traditional instruction, "frequently emphasizing techniques that research has largely discredited" (p. 80). Applebee (1984) found that the primary role of the writing teacher was that of examiner. The extent to which the traditional practices of writing is difficult to change was also evidenced by Tighe and Koziol (1982), Zamel (1985), and Sommers (1982).

It appears then, that teachers, even though they have the background to provide the writing instruction advocated by the whole language approach, may not change their view on writing instruction. An important point, however, is that they are in a position to change, unlike teachers who do not have a background in the philosophy of the writing process. Their task is twofold: the learning of the process and the teaching of it at the same time. It is likely that such teachers will not realize the same degree of student achievement that is possible for teachers with an understanding of the writing process. The impact of teachers upon the writing

achievement of students rests with their understanding of the writing process and their willingness to accept and practise the philosophy upon which it is based.

The Reading and Writing Relationship

The issue of the relationship between reading and writing was an important factor in the present study since the student component of the study was concerned with achievement in these areas and how responsive the achievement was to teacher effects. In particular, some attention was placed on the teacher effects on reading and writing outcomes after taking prior reading and writing performance into account. Therefore, this section presents some of the key points found in the related literature on the reading and writing relationship.

What is the relationship between reading and writing? This question has been the focal point of several studies. The relationship between reading achievement and writing ability was investigated by Loban (1963). He found high correlations between reading scores and ratings of writing quality in the upper elementary grades. On the basis of these correlations he concluded that good readers write well and poor readers write poorly. Yet, in his sample there were many good readers who were poor writers and many poor readers who were good writers. In reporting on these students when they reached grade nine, Loban noted that "the relationship between reading and writing becomes more pronounced as the years pass" (p. 82).

Other correlational studies of reading and writing achievement have found positive correlations between the two. Woodfin (1968), in a study of 500 grade three students, found that the most consistent predictors of writing quality were reading and language scores. In a study of superior and poor grade nine readers, Maloney (1967) found that good writers scored significantly higher than poor readers in tests of reading comprehension and vocabulary. An experimental program conducted in grade two written composition found a significant relationship between reading achievement and composition quality (Grimmer, 1970).

Other studies have found a significant relationship between reading ability and measures of syntactic complexity in students' compositions (Zeman, 1969; Evanechko, Ollila and Armstrong, 1974; Thomas, 1976; and Johnson, 1981). Studies on the relationship between writing quality and time spent reading have reported positive correlations as well. Students who read more tend to be better writers (Donelson, 1967; Felland, 1980; and Woodward and Phillips, 1967).

The above studies indicate clearly the positive relationship between reading and writing. Even though it is not clear whether reading instruction influences writing or vice versa, it would appear that the achievement level in one may function as a predictor of the achievement level in the other.

Curriculum Change

This study focusses on curriculum change and the role of the teacher in implementing that change. Also investigated is the impact of the teacher on student achievement. It is therefore appropriate to discuss briefly the literature related to the effects of curriculum change on both teachers and students.

Teacher Effects

One of the most difficult stages of curriculum change is implementation. Some people eagerly and enthusiastically accept curriculum innovations while others are cautious and reluctant and under some circumstances reject it (Nicholls, 1983). Barnes (cited in Nicholls, 1983) pointed out that either advocacy of, or resistance to, change may entail either rational or emotional behaviour. He described a typology which consists of:

First, rational advocates who propose innovations on the basis of reasoned argument; secondly, rational resisters who resist innovations on the basis of reasoned argument; thirdly, radicals who want change for the sake of change; and lastly, traditionalists who resist for the sake of resistance. (p. 40)

The literature suggests other reasons for resistance to innovations. Owens (1973), in addressing teachers as resisters, pointed out that resistance is not a simple phenomenon and he sees it as a result of a mixture of misunderstanding and ignorance. He identified other reasons which include fear, the workload associated with innovations

and the desire of some teachers to take the easy way out. Lippit, Watson, and Westley (1958) pointed to feeling inadequate and clinging to existing satisfactions as reasons for resistance. Guskin (cited in Nicholls, 1983) added authoritarianism and dogmatism and a belief in self-fulfilling prophecies as reasons for resistance to change.

Student Effects

There appears to be little literature or research dealing directly with curriculum change and its effect upon students. That is not to say, however, that there is no relationship between the two. Curriculum change is likely to affect students in some manner. After all, why is there change if not to benefit the student? A change in curriculum often requires students to take on new roles which in turn may affect the students' attitude toward that particular curriculum area. These attitudes are often crucial to a student's level of achievement.

According to Fullan (1982), however, research on student reactions to innovations is scanty. Therefore, one can only speculate that reactions will vary. Factors that may account for the variance include social class, type of innovation, teaching style and approach, and probably age and sex (Fullan, 1982). Student reaction, according to Fullan, is very important to the success of any innovation. Teacher knowledge of student views appears to be a crucial factor in curriculum change as well. It follows that if a teacher does not have a clear understanding of the students' feelings,

student achievement may suffer.

Since the teacher is responsible for the change in the classroom, the effect of curriculum change on the teacher is likely to have a direct effect on the student. In other words, the higher the level of teacher satisfaction with the innovation the more likelihood of a positive effect on students. Notwithstanding Fullan's (1982) view that student attitudes are important considerations in successful curriculum implementaton, it seems plausible to assume that attitude factors become more salient as one moves from primary through elementary to the secondary grades. Given, then, that the students in the present study were in grade one, it seems likely that teacher effects may be more important than in the later grades. In terms of Tuckman's (1980) model which approaches student achievement from an input process perspective it is held that teacher characteristics will be more influential in accounting for student achievement in the early grades than teacher characteristics in model of student achievement in the elementary and secondary grades. Furthermore, given the above argument, the posited teacher characteristics-student achievement relationship will hold when both input (in the form of materials) and student characteristics (including student attitudes) are taken into account in the form of covariates. Student achievement, then, is a function of input and process. The level of implementation appears to be a determining factor in realizing the intended student outcomes.

Implementation Factors

The worth of any classroom innovation is necessarily related to the implementation process. This process in turn is dependent upon the teachers charged with the task of implementing the innovation. Crucial to the implementation process is the teacher's acceptance of the innovation and how satisfied they are with the innovation. Nevertheless, there are several other factors which play a role in the teacher's approach to the innovation. In other words, the teacher's satisfaction with the program often hinges on these factors.

The success of any innovation will often reflect the implementation process. In the case of the present study, student achievement was viewed as an outcome of program implementation. Since this study investigated teacher satisfaction and student achievement in relation to implementation, the following implementation factors which appear most frequently in the literature will be discussed.

Knowledge of the Innovation

Curriculum change, according to Fullan (1982), encompasses new ways of thinking, new skills, and knowledge. In order to effectively implement a new program and realize the intended outcomes, teachers must first of all acquire a certain degree of understanding of the philosophy on

which the innovation is based, and at the same time be knowledgeable about the innovation. The abundance of literature on staff development and inservice generally points to the importance of teacher familiarity with the innovation in order for effective implementation to occur. Stallings (1980), in a study of an inservice approach used to teach basic skills at the secondary level, found that teachers who received inservice training achieved greater gains in student achievement in reading than did those teachers who did not receive the training. Pratt, Melle, Metsdorf, and Loucks (cited in Fullan, 1982), and Huberman (1981) also reported successful implementation as a result of effective inservice for teachers. It appears, then, that teacher understanding and knowledge of the innovation is often necessary to achieve successful implementation.

The importance of teacher knowledge of curriculum is clearly outlined in Experiencing Language (1988): "Effective language arts teaching requires knowledge of the language arts, what they are, their interrelatedness and importance and how language and thought are a part of each" (p. 2.1). It also points out that teachers faced with the daily task of guiding young children in the act of reading and writing, need an informed understanding of the processes involved.

Beebe (1988), in discussing problems in using the whole language approach and how the change is brought about in the school, pointed out the importance of teacher understanding of the approach:

However, no matter which way the change is brought about in a school system, it is crucial that the teachers come to understanding the theory underlying the approach. Otherwise, it is probably going to be less effective than the skills approach where reading and writing are broken down into teachable skills that are clearly laid out in the teachers' guidebook for the basal series in use. (p. 35)

To expect teachers to effectively teach a curriculum they are not familiar with is similar to expecting an apprentice in autobody work to restore a damaged car to its original form. Understanding of the task at hand and experience with it makes for successful outcomes.

Availability of Materials

The success of many programs in the classroom often depends on access to the required materials. Programs that require materials other than teacher made materials should not be pushed on teachers unless these materials are made available. The introduction of the whole language approach in the Newfoundland schools is no exception. The successful implementation of this program relies heavily on the required materials.

The whole language approach is based heavily on a print filled environment. Beebe (1988), in discussing the whole language classroom, described the print filled environment:

"Language experience charts, poetry, captions, labels, and most importantly, the childrens' productions cover the walls. The shelves and display cabinets are filled with trade books, big books, predictable books as well as books the children have authored" (p. 29). Some of the materials can be obtained locally; however, many cannot, but they must be made available as well.

The importance of reading materials for the classroom is stressed in Experiencing Language (1988). It is pointed out that the instructional program contains good literature; however, this functions as a starting point. Experiencing Language emphasizes the need for a school library which can be borrowed from in order to create a classroom library: a library which is continually changing in order to make new materials available. The types of literature recommended for the library of primary schools include folktales, realistic and imaginary experiences of animals, children and grownups, information books, humorous and nonsense books, books of poetry, and manipulative books.

If these materials are not made available to teachers of whole language, the program is likely to suffer. Teachers will be seriously handicapped in their effort to implement the whole language program and as a result their perceptions of the program may be adversely affected.

Explicitness and Complexity of the Innovation

Research on implementation has investigated the relationship between the explicitness of new programs and the

degree of implementation. Fullan and Pomfret (1977) pointed out the importance of explicitness of programs:

In any case, given the vagueness of many education innovations, the lack of attention to how new roles could be established, and the subsequent frustration of would-be users it is evident that some process of developing greater explicitness or specification is necessary for implementation to occur.
(p. 369)

In a case study carried out by Gross, Giacquinta, and Bernstein (1971), it was found that the majority of teachers were unable to identify the essential features of the innovation they were using. Chaters and Pellegrin (1973), in four case studies of differentiated staffing, found that the innovation was described in such abstract global terms which resulted in ambiguity on the part of the teachers as to what the change entailed behaviourally. Similar findings were reported by Crowther (1972), Downey and Associates (1975), and Lukas and Wohlleb (1973).

The complexity of a program has been considered as an implementation factor as well. Rogers and Shoemaker (1971) suggested that complexity of a program be measured in terms of the perception of complexity by the potential user. This perceived complexity or difficulty, according to Fullan and Pomfret (1977), is an important factor in the acceptance or adoption of a new program. However, they suggested the complexity be measured in connection with implementation since implementation depends on the ability of teachers to perform in new roles, not just on acceptance of the change.

The more difficulty and the greater the need for new behaviours an innovation brings with it, the more likely the degree of implementation will vary within groups of users. Related to this idea is that certain aspects of a particular innovation may be more complex, resulting in greater difficulty in implementation. In the writer's opinion, the present study entails elements of this hypothesis. The whole language philosophy is indeed complex and any program based on that philosophy is likely to entail new behaviours for the user. Teachers with different degrees of knowledge and background in the philosophy will probably display different reactions to the required behaviour. As well, some components of the whole language program will be more complex and create more difficulty in implementing.

Other studies conducted on characteristics of innovations such as Gross, Giacquinta, and Berstein (1971), and Evans and Schelffler (1974) found that those innovations requiring new teacher strategies and role relationship with students displayed lower levels of implementation as compared to innovations which involved changes in structure, administrative procedures, and the use of materials. Crowther (1972), in measuring the perceived complexity by teachers who were involved with a social science curriculum, found that it was significantly related to degree of implementation. Associated with complexity, according to Fullan and Pomfret (1977), is explicitness. As complexity increases the more difficult it is to be explicit about innovation.

In other words, the degree of explicitness is likely to be related to the degree of implementation.

Inservice and Staff Development

There is an abundance of research on the relationship of inservice and implementation. There is little disagreement on the importance of inservice; however, research has shown that it is not just inservice but the type that is provided for the potential users is the important factor in implementation. Crowther (1972) found that inservice given prior to implementation was significantly related to degree of implementation. Furthermore, it was found that teachers preferred certain types of inservice. Ranked types of inservice showed that model units and demonstrated lessons were most preferred. Ashley and Butts, and Cole (cited in Fullan and Pomfret, 1977) also found that inservice does indeed result in shifts towards behaviours associated with the implementation of the curriculum.

Probably one of the largest projects involving inservice training was the Humanities Curriculum Project reported by Hamingson, McDonald, and Walker (cited in Fullan and Pomfret, 1977). Schools in the United Kingdom in which teachers had received training by the sponsors of the innovation and a sample of untrained schools where the material was made available but no training given provided the researchers with samples for the study. Pretest and post-test data were gathered from a variety of pupils' tests

related to the objectives of the innovation. The results indicated substantial gains in pupil scores for the trained group compared to the untrained group. The sponsors of the innovation argue that teacher roles in innovations can be acquired only through an unlearning and relearning of classroom procedures.

Rand researchers found that the amount of staff training was related to teacher change but not to perceived success or perceived fidelity of implementation (Berman and Pauly, 1975, p. 56). However, the interaction and frequent meetings did show relationship to success and fidelity.

Fullan and Pomfret (1977) saw this result as reinforcement of the hypothesis that ongoing training linked to problems of initial implementation of specific innovations is an important factor. It appears that intensive inservice training as opposed to single workshop sessions or preservice training is an important factor. According to Fullan and Pomfret, this experience provides teachers with demonstration models and experience as well as psychological reinforcement conducive to resocialization.

Lippit (1966) assumed that if staff development is made available teachers will automatically not only become skilled at using new curriculum but also actively assist in its implementation. However, Tumposky (1987) pointed out that the failures of curriculum reforms in the 1960's and 1970's indicate that the provision of support services, such as inservice training, is a necessary but not sufficient

condition for curriculum implementation.

In Tumposky's (1987) view, it appears that teacher disposition to deal favourably or not with proposed curriculum changes is related to how they view their roles in the educational process. When this perception contrasts with that envisioned by the curriculum designers, the role mismatch can result in resistance to implementation. This gap, unacknowledged and often even unconscious, may explain why "nonimplementation" of educational innovations occurs even when the local school district authorities and teachers seem favourably disposed toward them.

There are three types of position people assume when faced with change according to Doyle and Ponder (1977): (a) the "rational adapter" is persuaded by information and/or logic; (b) the "stone-age obstructionist" is resistant to change and must be coerced; and (c) the "pragmatic skeptic" is willing to be convinced but is ultimately concerned with practicality. Doyle and Ponder put most teachers in category (c). In contrast, it appears that curriculum developers and disseminators view teachers as if they were type (a) by providing inservice training that explains and demonstrates the innovation often in a one-shot workshop or as if they were type (b) by imposing mandates or by creating "teacher proof" curriculum or materials.

The theme, the necessity for personal growth-oriented development, is one that occurs and reoccurs in the literature on successful curriculum implementation. Loucks and

Pratt (1979), in an analysis of the role of personal factors, focussed on this point, arguing that "the personal dimension is often more critical to the success of the change effort than are the technological dimensions." Citing findings from The Research and Development Center for Teacher Evaluation at the University of Texas at Austin, they reported on a successful implementation project. The focus of the implementation was teachers' concerns addressed through ongoing staff development that dealt with the different stages that individuals pass through when faced with change. Because change was seen as a process rather than an event, one-shot training (single session inservice) was viewed as both inappropriate and a waste of resources.

Other assumptions arising from this project were: that change is a product of individuals and not institutions; that change is a highly personal experience as is teaching; and that there is an element of developmental growth in both feelings and skills. Personal interaction is critical for staff development as part of curriculum implementation, and such staff development must be ongoing, interactive, and cumulative.

There is no doubt that staff development is high on the list of crucial factors in the successful implementation of curriculum innovations since the teacher is the most vital cog in the wheel of change in the classroom. Vaughan, Wang, and Dytman (1987) stressed the teacher factor in successful program change. Success in instructional innovations is

tied to the degree they are accepted and put into place in the classroom. In their study of staff development and teacher classroom performance, the result provided the following conclusions: (a) changes in teacher behaviours related to the innovations will occur over time and will usually take longer than a school year; (b) the process of change is not likely to be smooth and continuous; and (c) all features of the program are not likely to be implemented at the same rate by all teachers. The rate of change is directly related to factors such as complexity, degree of difference from previous practices, the level of explicit structural support, and the type and amount of inservice.

Tumposky (1987) viewed the following modes of staff development as facilitators of curriculum implementation:

1. Ongoing, interactive staff development, wherein participants can discuss their perceptions of the change process during its different phases of implementation.
2. Staff development provided by teachers themselves, rather than by supervisors or representatives of the curriculum policy-making body.
3. Staff development that invites teachers to select, define, and solve problems as they arise rather than be organized around predetermined topics generated by professional reformers (bureaucrats or academicians).
4. Staff development that stresses formative evaluation, i.e., ongoing assessment of curriculum as it is being implemented. (p. 193)

The Role of the Principal

According to Virgilio and Virgilio (1984), the principal, as the instructional leader, plays a crucial role in the

implementation of curriculum change. Sivage (1982) also pointed out the crucial role of the principal in implementation. The success or failure of new programs fall heavily with the principal.

One of the four assumptions which evolved from research at the University of Texas where a model of change called the Concerns-Based Adoption Model (Hall, Wallace, and Dossett, 1973), was that change entails developmental growth in both feelings about and skills in using new programs. In the view of Virgilio and Virgilio (1984), it is during this stage that the principal should be concerned with helping reduce anxiety levels for change and the high morality rate of implementation efforts. It is the responsibility of the principal to thoroughly understand the successful strategies that may be appropriate for the implementation process.

Also important to the process of implementation, according to Virgilio and Virgilio (1984), is communication. The principal must recognize the importance of open communication. Teachers need to be made aware of any available resources and, as well, it is the responsibility of the principal to give time and assistance when needed. Feelings of frustration must be discussed openly.

The principal is also seen as a key factor in staff development. According to Davidson (1979), staff development efforts must provide the continuous acquisition and refinement of skills and knowledge related to implementation needs. The principal's role is one of facilitator.

Providing accurate data about the curriculum content, giving feedback, modifying or adapting curriculum needs, and contributing to the stabilization of the implementation process are all responsibilities of the principal as a facilitator.

Teacher attitudes are crucial to the implementation process; therefore, the principal's influence in developing teacher attitudes conducive to curriculum change can be crucial as well. Nicholson and Tracy (1982), in their study on the principal's influence on teacher attitudes, looked at a major implication for the carrying out of a curricular change process. In identifying the principal's clarity of role, knowledge of the change and self, and teacher perception as an instructional leader as significant to teacher attitude, Nicholson and Tracy suggested that a distinct emphasis be placed on the principal in the change process. It was acknowledged that principals are sometimes by-passed in the change process or are given the information at the same time as the teacher. However, Nicholson and Tracy pointed out that the principal needs sufficient time and information to become familiar with the change in order to effectively transmit the change to teachers. This suggests an increased leadership role involving the principal in assisting teachers in their own personal adoption and implementation processes. Demonstration of the technical skills in the knowledge and use of the change, as well as human skills in helping teachers incorporate the change into their own classrooms, was seen as a key responsibility of the principal.

In a study of the implementation of new practices, Cox (1983) interviewed 144 principals. In schools where successful improvement efforts involved the principal in the process, a number of common threads appeared:

1. All instructional staff were aware that the successful implementation of the practice was a top priority.
2. The requisite materials were available.
3. Teachers had ready access to personnel within or outside the district who knew about and were experienced with the practice.
4. Teachers understood the expectation that all the components of the practice were to be implemented. (p. 10)

Given the evidence found in the literature regarding the importance of the factors in the implementation process discussed above, it appears that each of these factors may function as a determinant in teacher satisfaction/dissatisfaction in dealing with change. Teachers with little understanding of, and no experience with, the new approach may indeed be more affected by these factors.

Teacher Satisfaction/Dissatisfaction

Since teacher satisfaction/dissatisfaction with the new approach to the teaching of the primary language arts is a main component of this study, this section will identify some of the factors which, according to the literature, play a prominent role in teacher satisfaction/dissatisfaction during the implementation process. It is often difficult to determine the source of teacher satisfaction/dissatisfaction;

that is, whether it is some aspect of the job at hand or whether it is teaching in general. In the case of this study, the researcher was interested in determining how satisfied/dissatisfied the three teachers were with the new approach but at the same time was concerned with the sources of the satisfaction/dissatisfaction. Therefore, the two-factor theory which addresses the satisfaction/dissatisfaction component of this study will be discussed also.

Closely associated with teacher satisfaction/dissatisfaction is teacher attitude. In the present study, teacher attitude toward the specific innovation was of particular importance when considering teacher satisfaction/dissatisfaction. Evans (1976) conducted a study to identify those factors which appeared to be indicators of successful implementation of an innovative training program. The variables in the study were cognitive and affective measures as well as the demographic factors of age, sex, and years of experience. The results indicated that the higher implementor is likely to show a favourable attitude toward the materials and program, is likely to be less experienced and display lower scores in achievement and more cognitive measures. The results of this study indicated that attitude toward the program was by far the most direct causal factor in implementation.

With the teacher as the main line for program implementation, it is not surprising that teacher attitude has a role to play. Doyle and Ponder (1977) suggested that

teachers' perceptions of the practicality of a new teaching practice influences later implementation. One aspect of the practicality notion, according to Sparks (1988), is "congruence, the teacher's philosophical acceptance of a recommendation" (p. 111). This view promotes the idea that the more a teacher sees the innovation as fitting comfortably into his or her way of teaching, the more likely it will be adopted and practised. Mohlman, Coladarci, and Gage (1982) found that philosophical acceptance correlated with the degree to which teachers used practices offered in a training program.

Another aspect of Doyle's and Ponder's (1977) practicality notion deals with cost. This refers to the teacher's perception of the ease of using a program and the rewards which it will yield. From this perspective, if a teacher sees an innovation as difficult or complex and is not convinced that the effort required is justified, the practice is not likely to be adopted.

A third aspect associated with teacher attitudes is self-efficacy, the confidence in one's ability to handle things in the classroom. Ashton (1984) found that teacher efficacy related positively to student achievement. It appears that when teachers have a strong self-efficacy, they are likely to have the confidence to take risks and to experiment, and thus are more likely to improve.

A study conducted by Sparks (1988) investigated two questions related to teacher attitudes: (a) how teacher perceptions of the importance and ease of using new

practices are related to the use of them; and (b) how improving teachers differed from nonimproving teachers. The results indicated that teachers who saw the practices as important were more likely to use them. Further evidence showed that teachers who improved their teaching the most, valued recommended practices more than did the nonimproving teachers.

Another finding from the Sparks' (1988) study related to teachers' expectations for themselves and their students. The improving teachers were more willing to experiment with the recommended practices and were more confident that they could make improvements in their classes. However, non-improving teachers tended to defend their "natural" style of teaching, to attempt fewer changes, and to have lower expectations for themselves and their students.

Findley and Hamm (1977) evidently saw teacher attitudes as an essential factor in the changing of curriculum practice. Their statement is clear:

Unless teachers want change, forget it!
Just changing the program without concomitant change in teacher attitudes doesn't really change anything.
Teachers either make or break any program - no matter what the merits may be. Real change comes in changing the attitudes of teachers not in changing the product. (p. 59)

The concept of job satisfaction for teachers automatically triggers the belief that it has a positive impact on performance. The relationship between satisfaction at work and performance at work, however, is controversial according

to Galloway, Boswell, Panckhurst, Boswell, and Green (1985): "A sense of job satisfaction may enhance performance; alternatively, a feeling of success and achievement may be an important source of satisfaction" (p. 44). Several studies on job satisfaction (Rudd and Wiseman, 1962; Holdaway, 1978; and Kyriacou and Sutcliffe, 1979) used the single-item measure of overall satisfaction. Herzberg, Mausner, and Snyderman (1959), however, held the view that satisfaction and dissatisfaction are not extremes on the same continuum. The two may be separate and distinct. Herzberg et al. argued that satisfaction at work results from aspects of the job which meet individual needs. In the case of teaching, student progress may function as a need. On the other hand, it is argued that dissatisfaction on the job results from conditions at work rather than from the job itself. Therefore, it is possible to be both satisfied and dissatisfied at the same time. This is referred to as the two-factor theory.

The results of a study carried out in New Zealand (Galloway et al., 1985) to investigate sources of satisfaction/dissatisfaction for primary school teachers were found to be "broadly consistent with the two-factor theory of job satisfaction" (p. 49). Sources of satisfaction appeared to originate from intrinsic aspects of the job. On the other hand, dissatisfaction stemmed from conditions of employment which were viewed as inadequate.

If the two-factor theory is applied to the present study, it is possible that teachers are satisfied with their jobs in general and with the new language arts program in

respect to its approach to the teaching of language arts and the student response to it. Yet, they may be dissatisfied with conditions associated with the implementation of the program such as those factors discussed earlier.

Demographic Factors and Achievement

The main thrust of the student achievement component of this study was the effects of treatment (teacher experience with whole language) on achievement. However, other variables may affect achievement and therefore cannot be ignored in investigating the effects of treatment. Three variables which have received much attention in the literature are the demographic factors of sex differences, age, and class size. The purpose of this section, then, is to highlight the main points contained in the literature on these two variables.

Sex Differences

Sex differences in learning as indicated by achievement have been a matter of concern for decades. In the area of reading achievement, concern has been rather intense. Studies have indicated that differences do in fact exist. Bank, Biddle, and Good (1980) reported that on the average, American boys do not read as well as American girls. They also pointed out that numerous studies within the United States have shown that even though there are few sex differences in general intelligence or ability, girls tend to outperform boys in reading and verbal skills. The studies of Asher and Gottman (1974) and Gates (1961) found boys in

the middle grades to be from one-third to one-half a grade level behind girls in reading. Similar results have been documented regarding children with reading disabilities (Cahn, 1988).

Smith (1989), in a comparative study of two approaches to the teaching of reading, found the variable sex had a significant effect on reading ability, with girls achieving more in reading than boys. This study, since it was carried out in Newfoundland, is rather significant for the present study. Beattie (1970) pointed to research which reported that the differences in achievement between boys and girls upon school entry was as great, and in some cases exceeded the difference between younger and older entrants especially in language skills. Gredler (1980) reported that differences in academic achievement between younger and older entrants often were found only for boys. The literature, then, leaves little doubt that girls outperform boys in the early grades especially in reading achievement.

Age

The question of within grade age effects on achievement especially for grade one has been addressed by numerous researchers and reviewers (Sheppard and Smith, 1986). Generally, when the children who are youngest are compared with their older classmates they are less successful.

Hall (1963), in a review of literature related to school age entrance and achievement, found that the older a child was at the time of school entrance, the greater the

chance of academic success. A study conducted by Miller and Norris (1967) found that children entering grade one at a younger chronological age scored significantly lower on a readiness test than did children who were six years old or older when entering school. A more recent study by Campbell (cited in May and Welch, 1986) which examined the effect of school age entrance in the primary grades found that the majority of younger children had lower achievement percentile scores than the majority of older children. May and Welch (1986), in a study on the influence of birthdate and sex, concluded that "If there is a birth date effect, it seems to be limited to the early grades of school . . ." (p. 104).

There is little doubt that the literature does verify that there is an age effect in the early grades especially in grade one. The youngest children in the grade one class are likely to be at a disadvantage. That disadvantage, however, may only be slight according to Sheppard and Smith (1986) who reported that "the achievement differences that are 'statistically significant' in the studies are not necessarily very large" (p. 79).

Class Size

The issue of class size has generated considerable debate among researchers and practitioners. It seems logical that small classes should improve student achievement when compared to larger classes. The seemingly obvious advantage of smaller classes has been the focus of much attention in the province of Newfoundland, especially during

negotiations between the Newfoundland Teachers' Association and government. A search of the literature on earlier studies, however, indicates that there was no conclusive evidence on the issue. Educational Research Service Incorporated (1978), in a summary of research on class size, made the following conclusions:

1. The research findings on class size and its effect on student achievement is contradictory and inconclusive.

2. The research to date does not support the concept of an ideal class size in isolation from other factors.

3. Evidence seems to suggest that classes averaging twenty-five to thirty-four pupils have little effect on the academic achievement of most pupils beyond the primary grades.

4. Research evidence indicates that small classes are important in increasing pupil achievement in reading and mathematics in the primary grades.

5. There is also research evidence which indicates a positive relationship between small classes and student achievement for primary grades taught in small classes for two or more years.

During the 1980's, however, despite the attention which class size has already received, the issue is still very much with us, especially in the primary grades. Early studies dealt with bringing classes down from forty students to between thirty-five and forty. Glass (1982), in a meta-analysis of the research on class size, found that little

gain in achievement could be accomplished by reducing from forty students to as low as twenty-five. A substantial reduction in class size, however, to about fifteen students would likely yield increased achievement.

Current studies have investigated classes in the area of a 15:1 pupil-teacher ratio. Bain and Achilles (1986), in a study on kindergarten classes in Chicago with a pupil-teacher ratio of 16:1, found that the students achieved at or above the national norm on a standardized achievement test. Bain and Achilles also reported the outcomes of a two-year pilot program to reduce the pupil-teacher ratio to 14:1 in twenty-four kindergarten, grade one and two classrooms. Students in classes with a pupil-teacher ratio of 14:1 scored higher on standardized tests than students in the larger classes.

Even though early research on class size is inconclusive, more recent studies do appear to shed some light on the advantage of a low pupil-teacher ratio in the primary grades. Whereas early research dealt with class sizes in the range of thirty to forty students, more recent studies focussed on much smaller classes resulting in more conclusive results. If these more recent findings are applied to the local setting, students in primary grade classrooms with a pupil-teacher ratio less than 20:1 may have an advantage over students in larger classes.

CHAPTER III

METHODOLOGY

This chapter focusses on the hypotheses of the study, a description of the sample, and discussion of the variables and the instruments used to measure them.

Hypotheses

The questions from chapter one which provided the structure for chapter two led to the following hypotheses. The first group of fifteen is related to the student achievement model. Hypotheses Nos. 2, 7, and 12 are central to the study.

1. The most powerful predictor of reading achievement at the end of grade one is reading achievement at the beginning of grade one.
2. The effects of whole language teaching on reading achievement will operate over and above the impact of reading achievement at the beginning of grade one and other covariates.
3. Age effects on reading achievement will be examined over and above the effects of reading achievement at the beginning of grade one and the effects of other covariates. Despite the support for age effects in the research literature (positive effects) the view adopted here is an agnostic one; namely, that the effects will be negligible.
4. Sex effects on reading achievement will be examined over and above the effects of reading achievement at the

beginning of grade one, teaching effects and age effects. Despite the support for sex effects in the research literature (positive effects in favour of girls) the view adopted here is an agnostic one; namely, that the effects will be negligible.

5. The effects of writing achievement at the beginning of grade one on reading achievement at the end of grade one will be examined over and above the effects of reading achievement at the beginning of grade one, teaching effects, age and sex effects. The effects are expected to be negligible.

6. The most powerful predictor of sight vocabulary at the end of grade one is reading achievement at the beginning of grade one.

7. The effects of whole language teaching on sight vocabulary will operate over and above the impact of reading achievement at the beginning of grade one and other covariates.

8. Age effects on sight vocabulary will be examined over and above the effects of reading achievement at the beginning of grade one and over and above the effects of other covariates. As in the case of Hypothesis No. 3, age effects are expected to be negligible.

9. Sex effects on sight vocabulary will be examined over and above the effects of reading achievement at the beginning of grade one, teaching effects and age effects. As in the case of Hypothesis No. 4, sex effects are

expected to be negligible.

10. The effects of writing achievement at the beginning of grade one on vocabulary achievement at the end of grade one will be examined over and above the effects of reading achievement at the beginning of grade one, teaching effects, age and sex effects. As in the case of Hypothesis No. 5, the effects are expected to be negligible.

11. The most powerful predictor of writing quality at the end of grade one is writing quality at the beginning of grade one.

12. The impact of whole language teaching on the quality of writing will operate over and above writing achievement at the beginning of grade one.

13. The effects of reading achievement at the beginning of grade one on writing achievement at the end of grade one will be examined over and above writing achievement at the beginning of grade one and teaching effects. The effects are expected to be significant.

14. Age effects on writing achievement at the end of grade one will be examined over and above writing achievement at the beginning of grade one, teaching effects, and the effects of reading achievement at the beginning of grade one. As in the case of Hypotheses Nos. 3 and 8, age effects are expected to be negligible.

15. Sex effects on writing achievement will be examined over and above writing achievement at the beginning of grade one, teaching effects, the effects of reading

achievement at the beginning of grade one, and age effects. As in the case of Hypotheses Nos. 4 and 9, sex effects are expected to be negligible.

These hypotheses will be tested by estimating the equations called for by the conceptual model depicted in Figure 1. The equations are formulated in the footnote to Figure 1.

The following seven questions were addressed in the teacher satisfaction/dissatisfaction component of the study.

1. Will the most experienced grade one teacher of whole language be more satisfied with the Networks program than the least experienced teacher of whole language?

2. Will the teacher with the least experience in the teaching of whole language display greater frustration and dissatisfaction in implementing the Networks program than the most experienced whole language teachers?

3. Will the degree of satisfaction/dissatisfaction with the Networks program be responsive to the availability of materials?

4. Will the degree of satisfaction/dissatisfaction with the Networks program be responsive to the type, timing, and amount of inservice and staff development?

5. Will the degree of satisfaction/dissatisfaction with the Networks program be responsive to teacher perception of the willingness and ability of the principal to give support at the implementation stage of the Networks program?

6. Will the degree of satisfaction/dissatisfaction be responsive to teacher perception of how clearly the Networks program is structured?

7. Will teacher perception of the degree of implementation be responsive to knowledge of, and experience with, whole language?

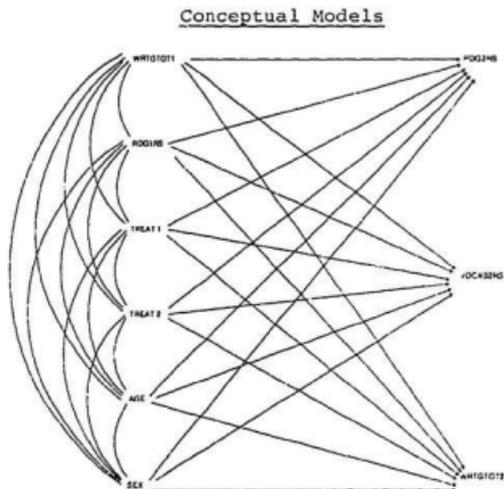


Figure 1. The Student Achievement Model.

Legend

- WRGTOT1 - Writing total score at the beginning of grade one.
 RDG1RS - Reading raw score at the beginning of grade one.
 TREAT1 - Teacher with no experience in teaching whole language.
 TREAT2 - Teacher with minimal experience in teaching whole language.
 AGE - In months.
 SEX - Gender.
 RDG2RS - Reading raw score at the end of grade one.

VOCAB2RS - Sight vocabulary raw score at the end of grade one.

WRTGTOT2 - Writing total score at the end of grade one.

Note: Teacher effects are treated as dummy variables. Thus, convention calls for the omission of one "group" (or class) in each case since it is the reference group for the interpretation of the coefficients. That is, one group is constrained to zero to resolve the problem of lack of linear independence among the dummy variable vectors. The convention is to drop the group offering the most meaningful interpretation--in this case the teacher with the most familiarity with the whole language approach. The conceptual model gives rise to the following equations which will be investigated using an ordinary least squares regression procedure.

RDG2RS = f(WRTGTOT1, AGE, TREAT1, SEX, RDGIRS, TREAT2) (1)

VOCAB2RS = f(WRTGTOT1, AGE, TREAT1, SEX, RDGIRS, TREAT2) (2)

WRTGTOT2 = f(WRTGTOT1, AGE, TREAT1, SEX, RDGIRS, TREAT2) (3)

Though the relationships suggested by these questions cannot be tested through the estimations of low inference procedures, they are formulated as a model in Figure 2. Since there are only three teachers in the study there are fewer cases than variables. Evaluation and interpretation of such a model requires a case study approach.

Sample

This study was conducted over the 1988-89 school year in three grade one classrooms in rural Newfoundland. The three classroom teachers had differing degrees of experience in teaching the whole language approach. The class of the teacher with the most experience with the whole language approach consisted of 7 girls and 10 boys ranging in age

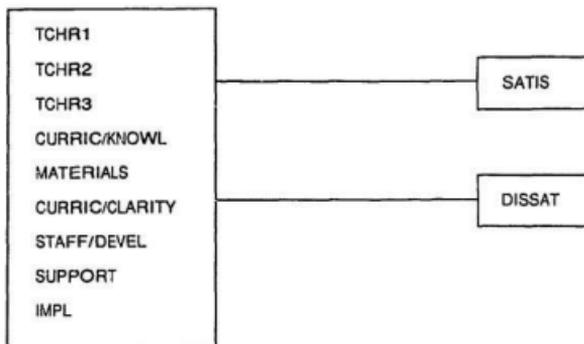


Figure 2. The Teacher Model.

Legend

- TCHR1 - Teacher with no experience in teaching whole language.
- TCHR2 - Teacher with minimal experience in teaching whole language.
- TCHR3 - Teacher with the most experience in teaching whole language.
- CURRIC/KNOW - Knowledge of whole language philosophy.
- MATERIALS - Materials required in teaching the new program.
- CURRIC/CLARITY - Curriculum clarity.
- STAFF/DEVEL - Staff development/in-service.
- ADMIN/SUPPORT - Administration support.
- IMPL - Implementation.
- SATIS - Satisfaction.
- DISSAT - Dissatisfaction.

*Note: Conceptual relationships to be examined using high inference procedures.

from 74 to 80 months. The teacher with the minimal background in the teaching of whole language had a class of 20 girls and 11 boys ranging in age from 73 to 81 months. The class of the teacher with no whole language experience consisted of 11 girls and 10 boys ranging in age from 73 to 82 months. Ages for the three classes were calculated as of December 31, 1988.

The teacher sample consisted of three grade one teachers. Selection was based on information obtained from the Primary Language Art Coordinator with the school board. The background in the whole language approach to the teaching of language arts varied with each teacher. The most experienced teacher in the whole language approach had taught from that perspective for at least three years, held a fifth grade teaching certificate, and had sixteen years teaching. The second teacher had minimal exposure to the whole language approach having worked with it during the previous school year, had certificate six, and twenty-seven years teaching. The third teacher, who had no experience with the whole language approach, held a fifth grade teaching certificate, and had fourteen years teaching.

Variables and Instrumentation

The study was designed to investigate two areas: namely, teacher effects on student achievement and teacher satisfaction with the whole language approach to language arts. Teacher effects were examined after controls were placed on prior achievement in reading, age, and sex. The variables,

then, in this component of the study include teacher experience with the whole language, reading comprehension, sight vocabulary, age, and sex. Teacher satisfaction was examined by investigating the attitudes toward implementation factors which include knowledge of the whole language philosophy, availability of materials, clarity and complexity of the program, inservice, and administrative support.

Dependent Variables

The Student Model

In the student achievement component of the study there were three outcome variables: namely, reading comprehension, sight vocabulary, and writing ability. Reading comprehension and sight vocabulary were measured using a pretest in early November and a posttest in late April of the 1988-89 school year. Samples of writing from each student were collected in early November and early May and were evaluated for quality.

Reading Comprehension and Vocabulary. Reading comprehension and vocabulary were measured by Level A, Form 1 of the Gates-MacGinitie Reading Tests. According to MacGinitie, Kamons, Kowalski, MacGinitie, and MacKay (1980), authors of the teacher's manual, the comprehension test involved the total reading task--understanding the relationships of words and ideas within a passage. The first passages of the test were simple sentences. The later passages involved longer sentences and more complex verbal relationships. Each

passage was accompanied by four pictures. The task required the child to choose a picture that illustrated the passage or that answered a question about the passage. Approximately 50 minutes were required to administer the comprehension test. A breakdown of the time allowed about 5 minutes for distribution of materials, about 10 minutes for instruction and practice items, and exactly 35 minutes for the test.

The vocabulary test was primarily a test of decoding skills. It contained forty-five items, each of which consisted of four printed words and a picture illustrating one of the words. The task for the child was to "sound out" (or recognize) the words, and to choose the one that corresponded to the picture. The four words for the picture looked and sounded somewhat alike. The approximate time for the administration of the vocabulary test was 40 minutes. About 10 minutes was allotted for distribution of materials, 10 minutes for instruction and practice items, and exactly 20 minutes for the test. The comprehension and vocabulary tests were administered in two separate sessions.

A raw score for each test was determined by counting the number of correct responses. The raw scores were then converted into derived scores--percentile ranks and grade equivalent--by using the table of norms.

Writing Ability. Teidt (1989) saw evaluation as an assessment of an individual student's writing ability at a particular point in time. Such an assessment can then be compared to an earlier assessment of the student's writing

in order to determine progress. She identified holistic scoring as one of the most recent approaches to writing assessment. According to Tiedt, "The intent of holistic assessment is to provide a score that indicates the general quality of a student's writing as a whole with no attempt to analyze specific errors" (p. 178).

Holistic scoring accommodates an acceptable degree of objectivity in evaluating writing samples. A set of criteria is developed as the basis for assessment. The criteria, according to Rupley (1976), should first of all reflect the purpose of the writing. According to Experiencing Language (1988), the meaning that young children try to convey is probably the most important aspect of their writing. Communication, then, is seen as one of the main purposes of writing. The ability to convey the message relies heavily on the child's vocabulary and the ability to present it in a form that the reader can understand. Sentence structure and appropriate use of vocabulary is critical to the success of the intended message.

Applebee (cited in Noseworthy, 1988) pointed out that children at a very early age possess a sense of story which continues to develop to include dialogue, characterization, and setting. In recognition of this claim, sentence structure was used as part of the criteria for evaluation of the writing samples in this study. The four-point rating scale and the set of criteria used for this study are adaptations of that used by Noseworthy (1988) and of several holistic

scoring samples provided by Tiedt (1989).

The following set of criteria was used in the evaluation of the writing samples for this study.

Story Structure

Coherence

0. No evidence of story structure.
1. The story is not well developed, or is a retelling of a known story.
2. The story is developed, with ideas following logically from beginning to end.
3. The story is well constructed and contains originality, such as an interesting beginning or a novel ending.

Characterization

0. No characters are identified.
1. The characters are identified, but not described.
2. The characters are identified and also described.
3. The characters are described, and behave according to their description.

Dialogue

0. There is no evidence of dialogue.
1. Dialogue is stilted or implied.
2. Appropriate dialogue is used for the characters.
3. Appropriate dialogue is used for the characters and is particularly effective.

Setting

0. There is no indication of setting.
1. Time and place are generally indicated.

2. Specific time and place are given.
3. Specific time and place are given and described.

Sentence Structure

0. There is no evidence of sentence structure. The writing is confined to scribbles and/or letters.
1. The writing is confined to simple sentences.
2. "And" is used to connect simple sentences or the writing consists of a complex sentence.
3. The writing contains both simple and complex sentences.

Vocabulary

0. There are no recognizable words.
1. The writing contains less than 15 words.
2. The writing contains 15 or more words. Common verbs are used and there is no use of descriptives.
3. A variety of verbs and/or descriptions is used.

Communication

0. No message is communicated.
1. The message is brief and/or is limited to a few words or a simple sentence.
2. The message is more complex but is not fluent.
3. The message is fluent and is supported by examples and/or detail.

The Teacher Model

In the teacher component of the study, teacher satisfaction was the dependent variable. This variable was associated with the satisfaction level of the teacher,

regarding the whole language approach on which the Networks language arts program is based.

Satisfaction. The satisfaction with the Networks program was measured through an interview with each teacher on their perceptions of specific factors in the implementation of the program. The interview consisted of four parts.

Part I included twenty questions regarding the program in the area of the understanding of the whole language philosophy, problems with the program, confidence in implementing the program, overall attitude toward the program, a measure of effectiveness of the program, program clarity, and impact of the program on workload. Part II was comprised of questions on inservice provided for the implementation of the program. Six questions addressed such areas as the amount of inservice provided, the type, timing, and importance of inservice.

Part III focussed on the support received by the teacher in implementing the new program. The six questions in this part addressed such areas as the importance of support from board office personnel, principals and colleagues, adequacy of support, and access to literature on whole language. Part IV consisted of six questions which addressed the materials aspect of the program. The questions cover such areas as the types of materials, adequacy of materials, and teacher preparation of materials. The interview schedule is provided as Appendix C.

A measure of teacher satisfaction with whole language was also carried out through a questionnaire. The response to the questions were on a four-point scale. Such areas as satisfaction, identity with whole language teaching, and commitment to whole language were addressed in the questions. To determine a score for each area, the scores for questions relevant to that area were totalled. The teacher questionnaire is reported in Appendix D.

Independent Variables

The Student Model

The independent variables for the student achievement component of this study were treatment, previous reading achievement, age, and sex.

Treatment. The treatment variable was the experience of the teacher with the whole language approach. Children were either in a class with an experienced teacher in whole language instruction, in a class with a teacher with minimal experience in the whole language approach, or in a class with a teacher with no experience in whole language instruction.

Previous Reading Achievement. Previous reading achievement was measured by the Basic R, Form 1 of the Gates-MacGinitie Reading Tests. The test items involved letter sounds, vocabulary, letter recognition, and comprehension (MacGinitie, Kamons, Kowalski, MacGinitie, and Mackay, 1980).

The test was administered in two separate sessions. The first session took about 45 minutes. Distribution of materials took about 5 minutes, practice items about 10 minutes, and about 30 minutes were required for the test. The second session required about 5 minutes for distribution of materials and about 35 minutes of actual testing time. There was no time limit for the test. Children were given ample time to complete each exercise.

Age and Sex. These two independent variables are discussed in the section describing the sample.

The Teacher Model

For the teacher satisfaction component of the study there were five independent variables. They included knowledge of the whole language philosophy, availability of the materials, clarity and complexity of the program, inservice, and administrative support. In discussing the interview format, these variables are described in the section on dependent variables in the teacher aspect of the study.

CHAPTER IV

FINDINGS 1: STUDENTS

Introduction

The purpose of this chapter is to present the results of the statistical analysis of the data collected for the student achievement study. Several statistical procedures were applied. First, simple descriptive statistics were generated. Included were frequencies for the nominal variables of SEX and treatment (TREAT). Condescriptive statistics were computed for the variable AGE and the continuous variables in the study which included reading achievement at the end of grade one (RDG2RS), vocabulary achievement at the end of grade one (VOCAB2RS), and writing achievement at the end of grade one (WRTGTOT2). The condscriptives procedures produced means, standard deviations, skewness, and kurtosis.

Secondly, analysis of variance was used in order to assess the differences between the three types of treatment (TREAT1, TREAT2, TREAT3) on the dependent variables RDG2RS, VOCAB2RS, and WRTGTOT2. An analysis of variance derives the variability from two perspectives: variability within the group (around the group mean), and the variability between the group means themselves.

Finally, multiple regression was computed on the three dependent variables of RDG2RS, VOCAB2RS, and WRTGTOT2. Subsequent to the initial multiple regression analysis

another was computed on the four composite variables of writing: WRTGSEN2, WRTGVOC2, WRTGCOM2, and STORY. Multiple regression is a more stringent test for determining the effects of the treatment on the outcome variables after placing statistical controls on selected independent variables.

Descriptive Statistics

Frequencies and Condescriptives

The dispersion of cases for the nominal variables of SEX and treatment (TREAT) was determined by frequencies. Condescriptive statistics were used in describing the variables AGE, WRTGTOT1, RDG1RS and the three outcome variables of RDG2RS, VOCAB2RS, and WRTGTOT2.

SEX. The data set contained 69 cases. Thirty-one or 44.9% of the total sample were boys. Thirty-eight or 55.1% of the cases were girls. The dispersion is represented graphically in Figure 3.

TREAT. There were three teachers in the study. Information contained in Figure 4 indicate that 21 or 30.4% of the student sample were given TREAT1. TREAT2 involved 31 or 44.9% of the sample while 17 or 24.6% of the cases received TREAT3.

Other Variables. Means, standard deviations, kurtosis, and skewness were generated for the variables AGE, WRTGTOT1, RDG1RS, and the three outcome variables RDG2RS, VOCAB2RS,

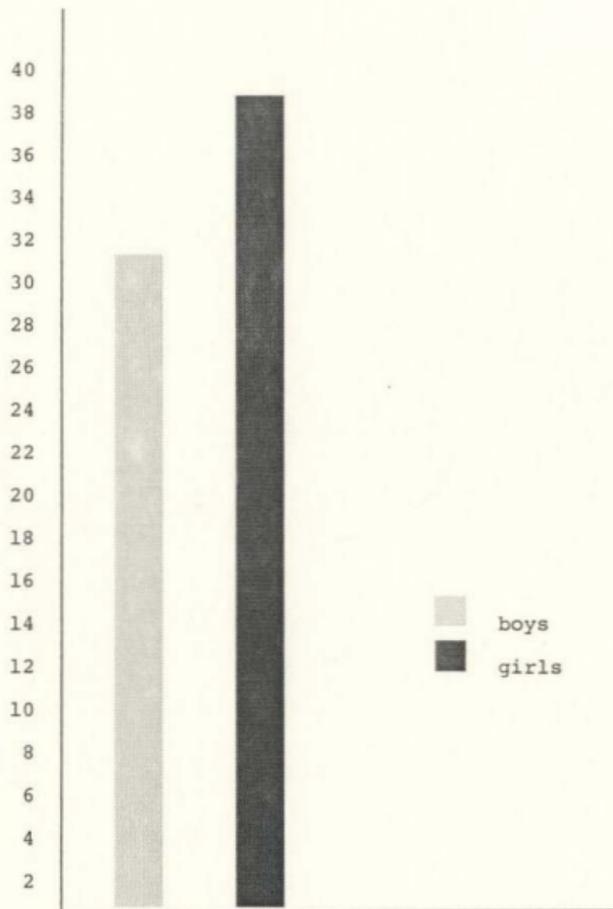


Figure 3. A bar graph representing the number of males and females.

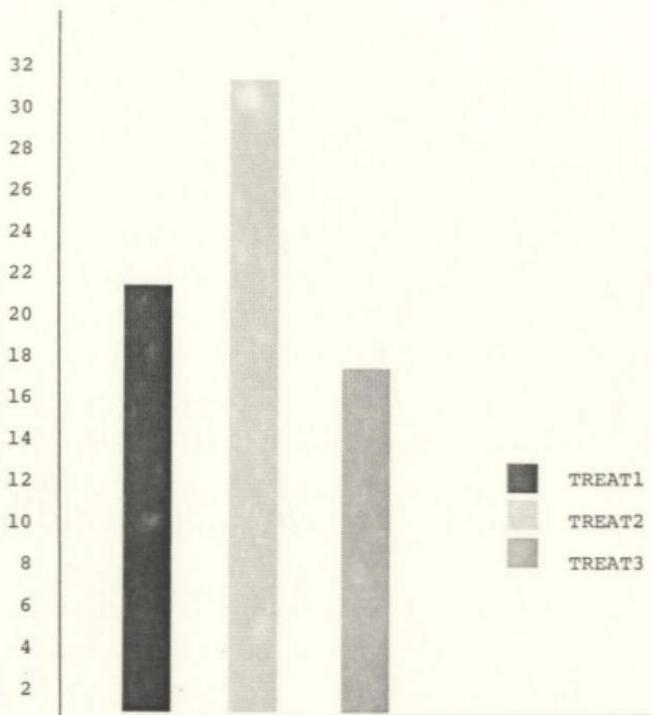


Figure 4. A bar graph representing the number of students in each treatment group.

and WRTGTOT2. This information is contained in Table 1.

Analysis of Variance

Even though this study was not in an experimental tradition where subjects are randomly allocated to treatment groups and, therefore, one-way analysis of variance procedures are not legitimate, it is desirable for the analyst to explore the relationships in the data. Thus, it is not uncommon for the analyst to conduct one-way ANOVAS in order to establish what the relationships might be had the study been in the experimental tradition. As is seen from Tables 2 and 3 where the dependent variables RDG2RS, VOCAB2RS, and WRTGTOT2 are "broken down" by treatment and sex respectively, the findings are promising. The treatment effects unaffected by potentially confounding variables were all significant. Sex effects were only significant for the writing outcome variable.

Note, however, that these results, promising though they seem, are only tentative. A more rigorous analysis calls for the regression of the outcome variables on the treatments (teacher effects) after controlling for the effects of important covariates; namely, prior achievements, sex, and age. This calls for a regression analysis.

Multiple Regression

Pearson Product-Moment Correlations

Represented in Table 4 are the zero-order correlations between all the variables used in the analysis. Both the

Table 1

Means, Standard Deviations (S.D.), Kurtosis and Skewness
for the Variables AGE, WRTGTOT1, RDG1RS, RDG2RS, VOCAB2RS,
and WRTGTOT2

Variables	Mean	S.D.	Kurtosis	Skewness
AGE	78.101	4.390	2.014	1.118
WRTGTOT1	5.174	2.657	-.221	-.261
RDG1RS	29.130	6.453	.522	.568
RDG2RS	22.508	10.209	-1.076	.192
VOCAB2RS	24.000	10.265	-.847	.414
WRTGTOT2	7.868	2.449	1.214	-.684

Table 2

ANOVA Results of Breakdown Analysis of RDG2RS, VOCAB2RS, WRTGTOT2 by TREAT

Dependent Variables	Source	SS	D.F.	Square	F.	Sig.	ETA	ETA ²
RDG2RS	1	1295.834	2	647.917	7.475	.001	.441	.194
	2	5374.412	62	86.684				
VOCAB2RS	1	1428.362	2	714.181	8.289	.001	.459	.211
	2	2341.638	62	86.156				
WRTGTOT2	1	103.707	2	51.854	11.307	.001	.508	.258
	2	298.102	65	4.586				

Note: 1 = between groups; 2 = within groups; SS = sum of squares;
D.F. = degrees of freedom.

Table 3

ANOVA Results of Breakdown Analysis of RDG2RS, VOCAB2RS, WRTGTOT2 by SEX

Dependent Variables	Source	SS	D.F.	Square	F.	Sig.	ETA	ETA ²
RDG2RS	1	24.027	1	24.027	.228	.635	.060	.004
	2	6646.219	63	105.496				
VOCAB2RS	1	3.947	1	3.947	.037	.849	.024	.001
	2	6766.053	63	107.398				
WRTGTOT2	1	28.426	1	28.426	5.025	.028	.266	.071
	2	373.383	66	5.657				

Note: 1 = between groups; 2 = within groups; SS = sum of squares;
D.F. = degrees of freedom.

Table 4
Zero order Correlations, Significance Levels, Means, and Standard Deviations (S.D.) for the Variables in the Study.

Variables	SEX	TREAT1	TREAT2	TREAT3	RDGIRS	AGE	WRTGTOT1	WRTGTOT2	RDG2RS	VOCAB2RS
SEX	1.000	.091	.079	.421	.398	.048	.415	.014	.317	.424
TREAT1	-.162	1.000	.000	.001	.425	.337	.149	.014	.281	.349
TREAT2	.171	-.597	1.000	.000	.003	.481	.002	.070	.007	.003
TREAT3	-.024	-.378	-.516	1.000	.000	.346	.000	.000	.000	.000
RDGIRS	-.032	-.023	-.332	.408	1.000	.350	.553	.000	.000	.000
AGE	.202	-.052	.006	.048	.047	1.000	.619	.452	.178	.256
WRTGTOT1	.026	-.127	-.347	.536	.553	.025	1.000	.000	.000	.000
WRTGTOT2	.264	-.264	-.180	.489	.478	.015	.636	1.000	.000	.000
RDG2RS	.058	-.071	-.296	.417	.766	-.113	.500	.454	1.000	.000
VOCAB2RS	-.024	-.048	-.326	.428	.722	-.080	.539	.440	.875	1.000
MEAN	1.551	.304	.449	.246	29.130	78.101	5.174	7.868	22.508	24.000
S.D.	.501	.464	.501	.434	6.453	4.390	2.657	2.431	9.904	9.978

NOTE: Correlation coefficients are reported below the diagonal; significance levels for each relationship are reported above the diagonal. p values < .05 are statistically significant.

correlations and significance levels are included in these statistics. The correlations between treatment, especially TREAT3 and the outcome variables of RDG2RS, VOCAB2RS, and WRTGTOT2, confirm the ANOVA results as do the correlations between SEX and the outcome variables.

Regression Analysis

To test the hypotheses of this study, regression techniques were used to examine the effects of each of the six independent variables on reading, vocabulary, and writing after placing statistical controls on the other five variables. In order to determine the correlations between the three criterion variables RDG2RS, VOCAB2RS, and WRTGTOT2 and the predictor variables, the statistical technique of multiple regression was applied. Three multiple regression equations were created using the three criterion variables.

$$\text{RDG2RS} = f(\text{WRTGTOT1}, \text{AGE}, \text{TREAT1}, \text{SEX}, \text{RDG1RS}, \text{TREAT2}) \quad (1)$$

$$\text{VOCAB2RS} = f(\text{WRTGTOT1}, \text{AGE}, \text{TREAT1}, \text{SEX}, \text{RDG1RS}, \text{TREAT2}) \quad (2)$$

$$\text{WRTGTOT2} = f(\text{WRTGTOT1}, \text{AGE}, \text{TREAT1}, \text{SEX}, \text{RDG1RS}, \text{TREAT2}) \quad (3)$$

It should be noted that teacher effects are treated as dummy variables. Therefore, convention calls for the omission of one "group" or class in each case since it is the reference group for the interpretation of the coefficients. That is, one group is constrained to zero to resolve the problem of lack of linear independence among the dummy variables. It is conventional to drop the group offering the most meaningful interpretation. In this case it is TREAT3.

Note, too, that it was the estimates of these equations which were used to test Hypotheses Nos. 1 through 15 and which were specified on pages 56-59. While the ANOVA and correlations results tend to support the hypotheses, the results of these analyses are tentative. Controls have to be placed on potentially confounding variables such as age, sex, and prior achievement before firm conclusions can be drawn about the results of the research. Thus, regression extenuation is called for.

The estimates for equation one are contained in Table 5 and Figure 5 presents a graphic view. This equation gave the effects of WRTGTOT1, while controlling for RDG1RS, TREAT1, TREAT2, AGE, and SEX, the effects of TREAT1 while controlling for WRTGTOT1, RDG1RS, TREAT2, AGE, and SEX, the effects of TREAT2 while controlling for WRTGTOT1, RDG1RS, TREAT1, AGE, and SEX, the effects of AGE while controlling for WRTGTOT1, RDG1RS, TREAT1, TREAT2, and SEX, the effects of RDG1RS while controlling for WRTGTOT1, TREAT1, TREAT2, AGE, and SEX and the effects of SEX while controlling for WRTGTOT1, RDG1RS, TREAT1, TREAT2, and AGE.

The earlier tentative acceptance of Hypothesis No. 1 concerning the relationship between RDG1RS and RDG2RS was accepted. The relationship was strong with a t-value of 7.48 significant at the .000 level and a Beta weight of .702.

The relationship between TREAT1 and RDG2RS was not supported. The standardized partial beta coefficient for TREAT1 was $-.093$ and not statistically significant. For

Table 5

Regression Coefficients, Standard Errors, Standardized
Regression Coefficients, T-Values, and Significance Levels
for the RDG2RS Path Model

Independent Variables	Dependent Variable				
	RDG2RS				
	B	SE(B)	Beta	t-value	P
WRTGTOT1	.191	.376	.051	.507	.614
AGE	.398	.176	.176	-2.255	.028
TREAT1	-2.529	2.287	-.118	-1.106	.273
SEX	2.348	1.574	.119	1.492	.141
RDG1RS	1.077	.144	.702	7.487	.000
TREAT2	-2.662	2.282	-.135	-1.166	.248

Mult R = .799

$R^2 = .638$

Note: B = regression coefficient; SE(B) = standard errors; Beta = standardized partial regression coefficients; t-values = T-Values; and p = significance levels.

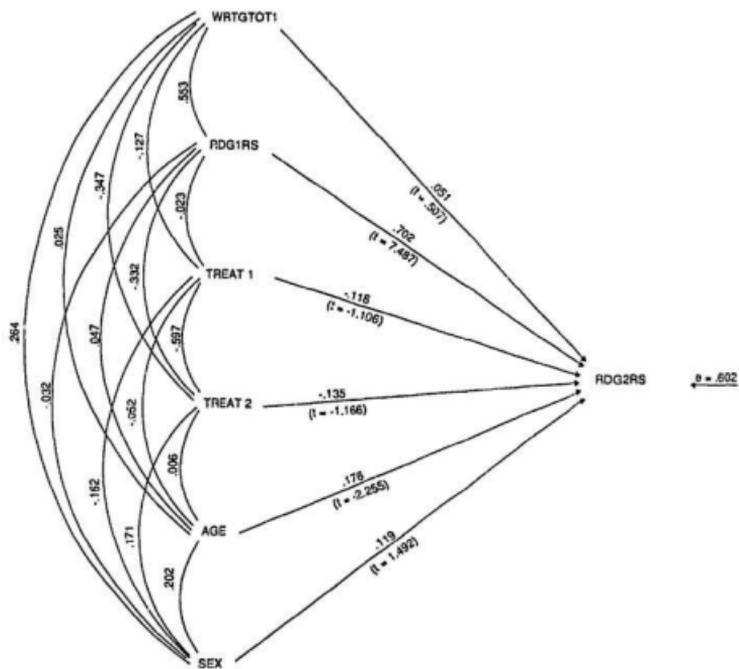


Figure 5. Path diagram for the reading achievement model.

TREAT2 the beta coefficient was larger at $-.122$ but still not significant at the $.05$ level. Thus, the earlier tentative acceptance of Hypothesis No. 2 was not supported.

A fourth relationship in equation one was between RDG2RS and AGE. Table 5 shows a negative relationship in favour of boys which is significant at the $.028$ level. This negated acceptance of Hypothesis No. 3 which stated a negligible relationship. The relationship between SEX and RDG2RS in equation one was not significant with a t -value of 1.492 and a significance level of $.141$. This substantiates acceptance of the hypothesis which stated a negligible relationship. Hypothesis No. 5, which specified a negligible relationship between WRTGTOT1 and RDG2RS, was accepted. The relationship with a beta of $.051$ was not significant at the $.05$ level.

The second equation extenuated the effects of WRTGTOT1, RDG1RS, treatment (TREAT1 and TREAT2), AGE, and SEX on VOCAB2RS. The relationship of each of the six independent variables and VOCAB2RS was assessed while controlling for the remaining five.

Data contained in Table 6 and Figure 6 show a strong relationship between RDG1RS and VOCAB2RS. A Beta weight of $.672$ with a significance level of $.000$ confirms the acceptance of Hypothesis No. 6 stating a strong relationship. The hypothesized relationship between treatment and VOCAB2RS was not supported. Significance levels of $.393$ for TREAT1 and $.296$ for TREAT2 were unacceptably high, hence Hypothesis No. 7 was rejected.

Table 6

Regression Coefficients, Standard Errors, Standardized
Regression Coefficients, T-Values, and Significance Levels
for the VOCAB2RS Path Model

Independent Variables	Dependent Variable VOCAB2RS				
	B	SE(B)	Beta	t-value	P
WRTGTOT1	.433	.380	.115	1.139	.259
AGE	.282	.178	-.124	-1.581	.119
TREAT1	-1.993	2.314	-.093	-.861	.393
SEX	.510	1.592	.026	.321	.750
RDG1RS	1.040	.146	.672	7.142	.000
TREAT2	-2.432	2.308	-.122	-1.053	.296

Mult R = .797

$R^2 = .635$

Note: B = regression coefficient; SE(B) = standard errors; Beta = standardized partial regression coefficients; t-values = T-Values; and p = significance levels.

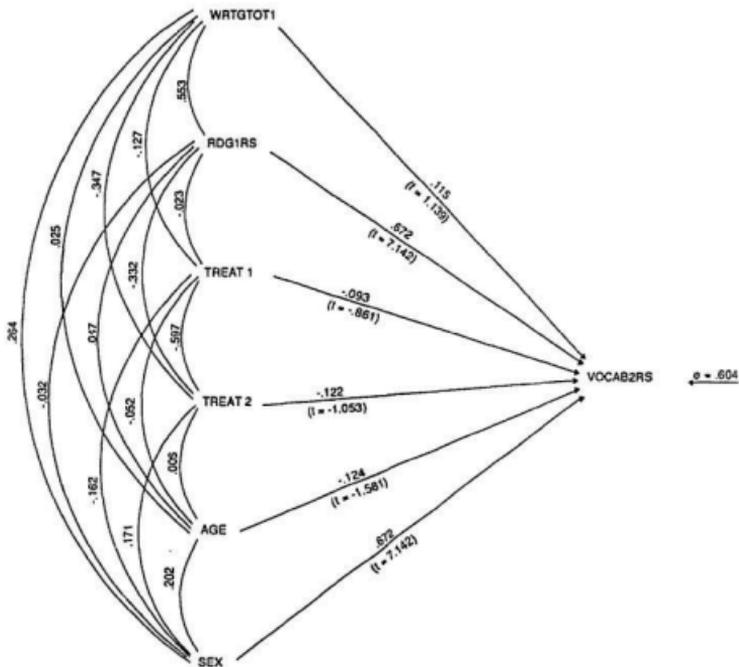


Figure 6. Path diagram for the vocabulary achievement model.

Hypothesis No. 8, which stated that there would be no significant relationship between AGE and VOCAB2RS was substantiated in the analysis of equation two. The relationship between SEX and VOCAB2RS was also insignificant which supported Hypothesis No. 9. The Table 6 estimates also confirmed that when controlling for early reading there would be no relationship between writing performance at the beginning of grade one and reading performance at the end of grade one. Hypothesis No. 10 was confirmed.

Equation three was generated to determine the effects of WRTGTOT1, RDGIRS, treatment (TREAT1 and TREAT2), AGE, and SEX on WRTGTOT2. As in the case of equations one and two statistical controls were applied. The earlier tentative acceptance of Hypothesis No. 11, which stated that WRTGTOT1 would be the most powerful predictor of WRTGTOT2, was upheld in this equation. Data presented in Table 7 and the coefficients in Figure 7 show a strong relationship with a t-value of 3.807 and a significance level of .000. The relationship between RDGIRS and WRTGTOT2 was not significant with a beta of .186 and a significance level of .086; hence, Hypothesis No. 13 was rejected. However, it appears that the relationship is in the direction of that suggested by the research literature. The relationship computed between treatment and WRTGTOT2 in equation three substantiates Hypothesis No. 12 which stated a significant relationship. While the relationship between TREAT2 and WRTGTOT was insignificant, the relationship between TREAT1 and WRTGTOT2 was

Table 7

Regression Coefficients, Standard Errors, Standardized Regression Coefficients, T-Values, and Significance Levels for the WRTGTOT2 Path Model

Independent Variables	Dependent Variable WRTGTOT2				
	B	SE(B)	Beta	t-value	P
WRTGTOT1	.398	.105	.435	3.807	.000
AGE	.038	.049	.070	-.788	.434
TREAT1	-1.407	.636	-.268	-2.211	.031
SEX	1.255	.438	.259	2.865	.006
RDGLRS	.070	.040	.186	1.746	.086
TREAT2	-.833	.635	-.171	-1.311	.195

Mult R = .731

$R^2 = .535$

Note: B = regression coefficient; SE(B) = standard errors; Beta = standardized partial regression coefficients; t-values = T-Values; and p = significance levels.

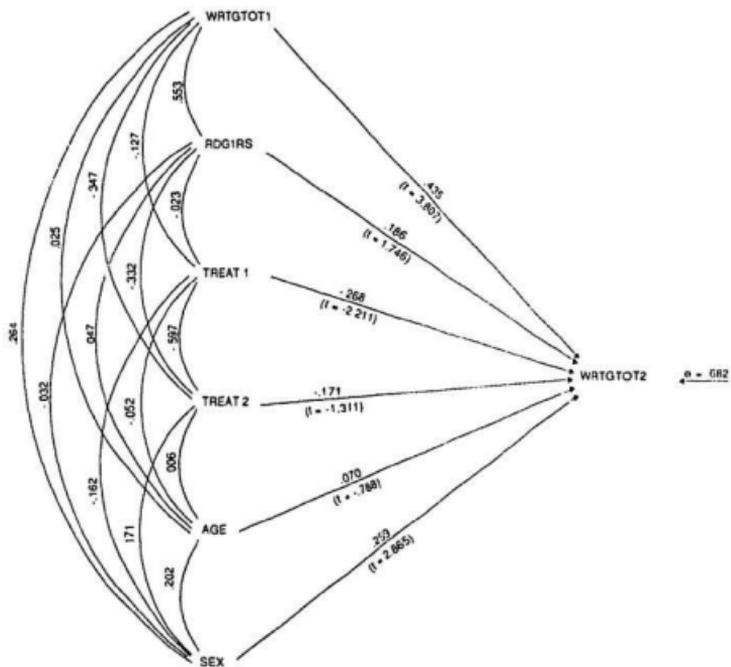


Figure 7. Path diagram for the writing achievement model.

significant at the .031 level with a Beta weight of $-.268$ and a t-value of -2.211 . In relationship to the omitted variable TREAT3, the negative relationship of TREAT1, indicates TREAT3 as highly significant.

The effect of AGE on WRTGTOT2 in equation three was not significant with a p value of $.434$. This supports the earlier acceptance of the hypothesis which stated a negligible relationship. However, the relationship between SEX and WRTGTOT2 was fairly strong in favour of girls with a t-value of 2.865 and a significance level of $.006$, thus supporting the rejection of Hypothesis No. 15 which stated a relationship of no significance.

In view of the fact that the relationships between SEX and WRTGTOT2 and between TREAT1 and WRTGTOT2 were significant, the question arose as to the areas of writing where the relationships existed. In order to investigate this question a further regression analysis was computed using the component variables of WRTGTOT2 as dependent variables. There were seven component variables. Under the heading "story structure" four components were combined. These were the variables WRTGCOH2 (coherence), WRTGCHR2 (characterization), WRTGDIA2 (dialogue) and WRTGSET2 (setting). The remaining three were WRTGSEN2 (sentence structure), WRTGVOC2 (vocabulary), and WRTGCOM2 (communication).

The four components related to story structure were combined because no one of these components had much

variance. The resultant composite was labelled STORY. STORY along with sentence structure (WRTGSEN2), vocabulary (WRTGVOC2), and communication (WRTGCOM2) were the dependent variables in a regression analysis designed to identify which aspects of writing were the most responsive to whole language treatments. These four criterion variables generated four new regression equations:

$$\text{WRTGSEN2} = f(\text{WRTGTOT1}, \text{AGE}, \text{TREAT1}, \text{SEX}, \text{RDG1RS}, \text{TREAT2}) \quad (1)$$

$$\text{WRTGVOC2} = f(\text{WRTGTOT1}, \text{AGE}, \text{TREAT1}, \text{SEX}, \text{RDG1RS}, \text{TREAT2}) \quad (2)$$

$$\text{WRTGCOM2} = f(\text{WRTGTOT1}, \text{AGE}, \text{TREAT1}, \text{SEX}, \text{RDG1RS}, \text{TREAT2}) \quad (3)$$

$$\text{STORY} = f(\text{WRTGTOT1}, \text{AG48765E}, \text{TREAT1}, \text{SEX}, \text{RDG1RS}, \text{TREAT2}) \quad (4)$$

The zero-order correlations (Table 8) in the second multiple regression analysis are discussed first. Included in these statistics are correlations and significance levels.

The data presented in Table 8 for equation one showed that the relationship between TREAT1 and WRTGSEN2 was significant with significance level of .001. However, with a correlation of $-.162$ the relationship was in favour of TREAT1, the predictor variable dropped from the analysis.

Significance levels for RDG1RS and WRTGTOT1 showed a significant relationship for each with WRTGSEN2. TREAT2, SEX, and AGE showed no significant relationship with WRTGSEN2. In equation two, the effects of SEX, TREAT1, RDG1RS, and WRTGTOT1 on WRTGVOC2 were significant with significance levels of .019, .005, .005, and .000 respectively. Again, TREAT1 showed a negative relationship

Table 8
Zero order Correlations, Significance Levels, Means, Standard Deviations (S.D.), for the Variables of
the Writing Component of the Study.

Variables	SEX	TREAT1	TREAT2	TREAT3	RDCINS	AGE	WRITGTTOTL	WRITGSENZ	WRITGVOZ2	WRITGCOZ2	STORY
SEX	1.000	.091	.079	.421	.398	.048	.415	.089	.019	.039	.060
TREAT1	-.162	1.000	.000	.001	.425	.337	.149	.001	.005	.370	.052
TREAT2	.171	-.597	1.000	.000	.003	.481	.002	.288	.150	.045	.054
TREAT3	-.024	-.378	-.516	1.000	.000	.346	.000	.000	.000	.010	.246
RDCINS	-.032	-.023	-.332	.408	1.000	.350	.000	.003	.005	.000	.000
AGE	.202	-.052	.006	.048	.067	1.000	.419	.329	.339	.357	.441
WRITGTTOTL	.026	-.127	-.347	.536	.553	.025	1.000	.000	.000	.000	.000
WRITGSENZ	.164	-.364	-.069	.468	.322	-.054	.552	1.000	.000	.000	.000
WRITGVOZ2	.250	-.311	-.126	.478	.311	.051	.521	.661	1.000	.000	.000
WRITGCOZ2	.214	-.041	-.206	.281	.477	.045	.434	.554	.508	1.000	.000
STORY	.189	-.197	-.196	.437	.465	.018	.535	.543	.491	.569	1.000
MEAN	1.551	.304	.449	.246	29.130	78.101	5.174	2.194	1.627	1.836	2.224
S.D.	.501	.464	.501	.434	6.453	4.390	2.657	.862	.565	.558	1.041

NOTE: Correlation coefficients are reported below the diagonal; significance levels for each relationship are reported above the diagonal. p values < .05 are statistically significant.

with a correlation of $-.126$. The positive relationship computed for SEX was in favour of girls. The strongest relationships were between WRTGTOT1 and WRTGVOC2 with a correlation of $.521$ and between RDGIRS and WRTGVOC2 with a correlation of $.311$. AGE and TREAT2 effects were not significant.

The relationships given for equation three showed significant effects for SEX, TREAT1, RDGIRS, and WRTGTOT1. As in the case of TREAT1 in equations one and two, the effects are in the negative order thus indicating a positive and significant effect for TREAT1. Again, SEX effects were in favour of girls. AGE and TREAT2 effects were insignificant.

In equation four, significant effects were computed for WRTGTOT1 and RDGIRS. The relationship between STORY and the remaining five predictor variables showed no significance. However, SEX, TREAT1 and TREAT2 with significance levels of $.060$, $.050$, and $.054$ respectively, while not significant, the relationships were in the right direction.

The regression analysis was used to test the relationship between the composite variables of writing and the six predictor variables. In order to test the relationship between each of the six predictor variables and the dependent variables, statistical controls were placed on each of the five remaining predictor variables.

The analysis of equation one generated the results presented in Table 9. A graphic representation is given in

Table 9

Regression Coefficients, Standard Errors, Standardized Regression Coefficients, T-Values, and Significance Levels for the WRTGSEN2 Path Model

Independent Variables	Dependent Variable				
	WRTGSEN2				
	B	SE(B)	Beta	t-value	P
WRTGTOT1	.138	.041	.424	3.349	.001
AGE	-.022	.019	-.114	-1.162	.250
TREAT1	-.731	.250	-.393	-2.924	.005
SEX	.245	.172	.142	1.422	.160
RDGLRS	.004	.016	.032	.274	.785
TREAT2	-.291	.249	-.169	-1.168	.274

Mult R = .655
 $R^2 = .429$

Note: B = regression coefficient; SE(B) = standard errors; Beta = standardized partial regression coefficients; t-values = T-Values; and p = significance levels.

Figure 8. The effects of TREAT1 on WRTGSEN2 as presented in the zero-order correlations discussion are substantiated in the regression analysis as are those for WRTGTOT1. The t-value for TREAT1 at -2.924 indicates fairly strong effects for TREAT3. The significance indicated by the zero-order correlations for RDGIRS was not supported in the regression analysis. As discussed earlier, TREAT2, SEX, and AGE effects were insignificant.

The significant effects of WRTGTOT1, TREAT1, and SEX on WRTGVOC2 in equation two reconfirms the earlier significance levels from Table 8. TREAT1, with a t-value of -2.809 significant at the .007 and a beta weight of -.065, substantiates the fairly strong effects of TREAT3 (Table 10). Contrary to the zero-order correlations results, RDGIRS effects on WRTGVOC2 were not significant. The insignificant effects of AGE and TREAT2 are reconfirmed (Figure 9).

The analysis for equation three supports earlier significant effects of SLX (in favour of girls) and RDGIRS (Figure 10); however, the significant effects of TREAT1 and WRTGTOT1 given in the zero-order correlation results, were refuted. The insignificant effects of TREAT2 and AGE were supported (Table 11).

The relationship between STOPY and the six predictor variables computed in the regression analysis for equation four (Table 12) showed significant effects for WRTGTOT1 with a Beta weight of .106 and a t-value of 2.144 (Figure 11). The remaining five predictor variables showed no significant

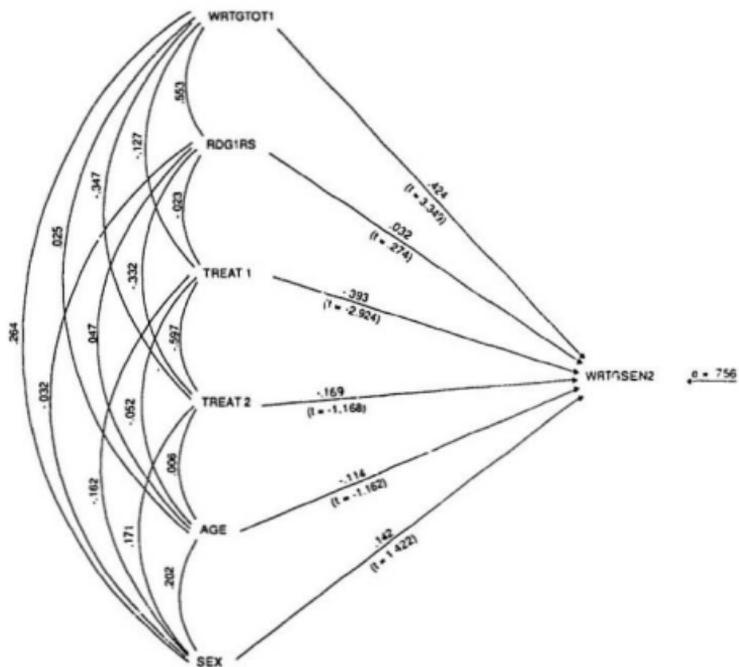


Figure 8. Path diagram for the sentence structure component of the writing achievement model.

Table 10

Regression Coefficients, Standard Errors, Standardized Regression Coefficients, T-Values, and Significance Levels for the WRTGVOC2 Path Model

Independent Variables	Dependent Variable: WRTGVOC2				
	B	SE(B)	Beta	t-value	P
WRTGTOT1	.077	.027	.363	2.805	.007
AGE	-.003	.013	-.023	-.234	.816
TREAT1	-.469	.167	-.385	-2.809	.007
SEX	.257	.115	.228	2.235	.029
RDG1RS	.002	.011	.023	.192	.849
TREAT2	-.296	.167	-.262	-1.572	.061

Multi R = .636

$R^2 = .405$

Note: B = regression coefficient; SE(B) = standard errors; Beta = standardized partial regression coefficient; t-values = T-Values; and p = significance levels.

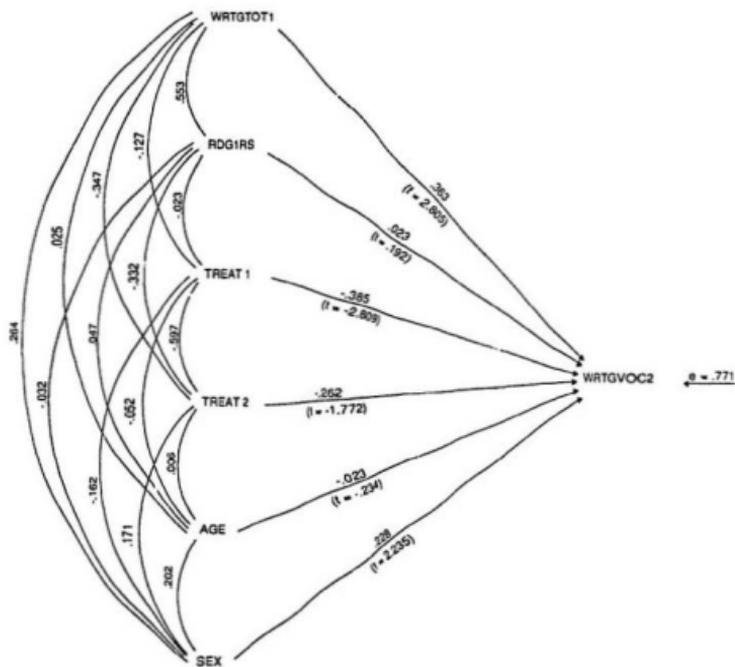


Figure 9. Path diagram for the vocabulary component of the writing achievement model.

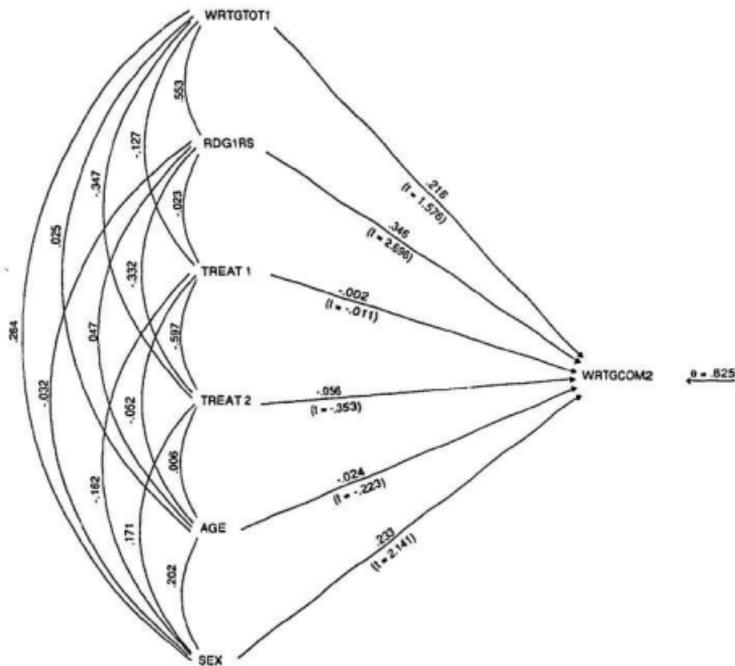


Figure 10. Path diagram for the communication component of the writing achievement model.

Table 11

Regression Coefficients, Standard Errors, Standardized
Regression Coefficients, T-Values, and Significance Levels
for the WRTGCOM2 Path Model

Independent Variables	Dependent Variable WRTGCOM2				
	B	SE(B)	Beta	t-value	P
WRTGTOT1	.046	.029	.218	1.576	.120
AGE	-.003	.014	-.024	-.223	.825
TREAT1	-.002	.177	-.002	-.011	.991
SEX	.260	.122	.233	2.141	.036
RDGLRS	.030	.011	.346	2.696	.009
TREAT2	-.062	.176	-.056	-.353	.725

Mult R = .566

$R^2 = .320$

Note: B = regression coefficient; SE(B) = standard errors; Beta = standardized partial regression coefficients; t-values = T-Values; and p = significance levels.

Table 12

Regression Coefficients, Standard Errors, Standardized
Regression Coefficients, T-Values, and Significance Levels
for the STORY Path Model

Independent Variables	Dependent Variable STORY				
	B	SE(B)	Beta	t-value	P
WRTGTOT1	.120	.051	.306	2.244	.022
AGE	-.012	.024	-.051	-.499	.620
TREAT1	-.524	.311	-.233	-1.682	.098
SEX	.400	.214	.192	1.865	.067
RDG1RS	.038	.020	.239	1.964	.054
TREAT2	-.379	.311	-.182	-1.219	.227

Mult R = .626

$R^2 = .392$

Note: B = regression coefficient; SE(B) = standard errors; Beta = standardized partial regression coefficients; t-values = T-Values; and p = significance levels.

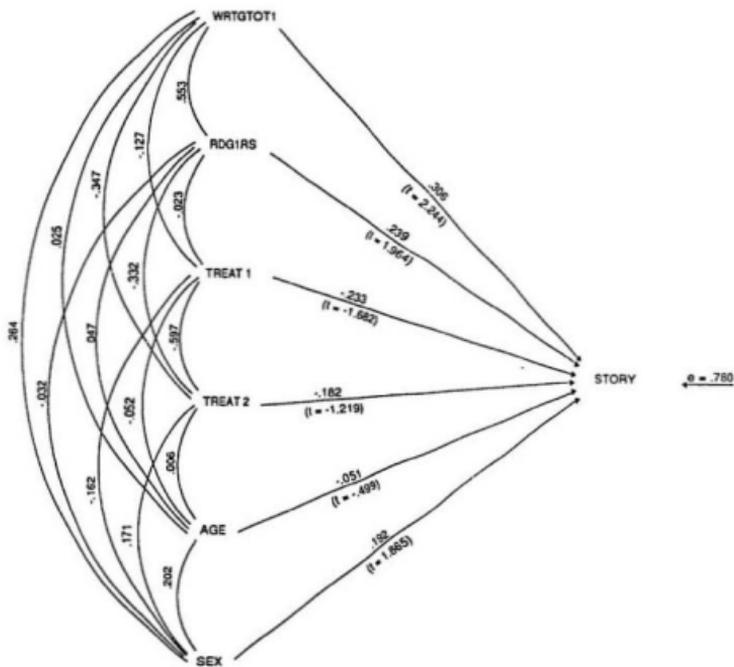


Figure 11. Path diagram for the story component of the writing achievement model.

relationship with STORY. While the relationships between STORY and TREAT1, SEX, and RDGLRS were not significant, they were in the right direction.

Summary of Findings

Acceptance or rejection of the fifteen relationships specified in this study was based on results computed on the collected data using different levels of statistics from simple descriptive statistics to the more complex multiple regression. All relationships were tested by regression analysis and the results are presented in Table 13 as an integrated model. The relationships are displayed graphically in Figure 12. The following relationships were statistically significant.

1. The reading achievement at the end of grade one was responsive to reading achievement at the beginning of grade one. This was substantiated by the significance level of .000 and a Beta weight of .702.

2. Reading achievement was responsive to age. This relationship was significant (.028) at the .05 level.

3. Sight vocabulary was responsive to reading achievement. The t-value of 7.14 gave a significance level of .000.

4. The sentence structure component of writing was responsive to writing achievement at the beginning of grade one. The t-value of 3.49 gave a significance level of .001.

5. The sentence structure component of writing was responsive to experience in the teaching of whole language.

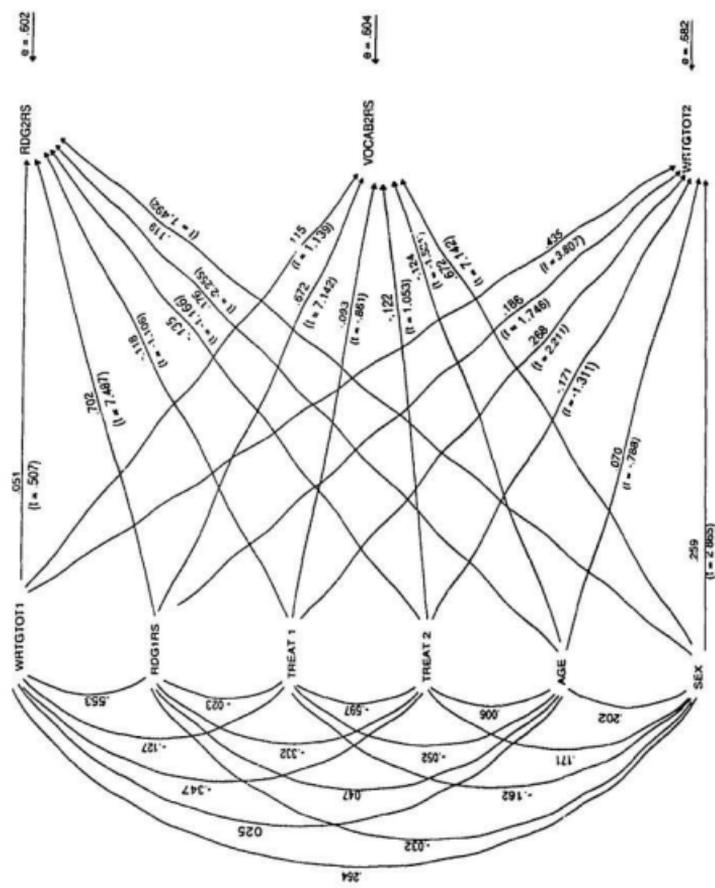


Figure 12. Path diagram for the integrated model of WRITGTOT1, RDG1RS, TREAT1, TREAT2, AGE and SEX on RDG2RS, VOCAB2RS, and WRITGTOT2.

The relationship between TREAT1 and sentence structure gave a significance level of .005 and a t-value of -2.942 which indicated the relationship in favour of the teacher with the most experience in the teaching of whole language.

6. The vocabulary component of writing was responsive to writing achievement at the beginning of grade one. The relationship was statistically significant (.007) at the .05 level.

7. The vocabulary component of writing was responsive to experience in the teaching of whole language. TREAT1 with a t-value of -2.809 indicated that the relationship was in favour of the most experienced teacher of whole language.

8. The vocabulary component of writing was responsive to sex differences. This relationship was statistically significant (.029) at the .05 level.

9. The ability to communicate through writing was responsive to reading at the beginning of grade one. The t-value of 2.696 gave a significance level of .009.

10. The ability to communicate through writing was responsive to sex differences. The relationship gave a significance level of .036.

11. The story structure component of writing was responsive to writing achievement at the beginning of grade one. This relationship was significant (.022) at the .05 level.

Even though the relationships between STORY and treatment (TREAT) and between RDG1RS were not statistically significant, they were in the right direction.

CHAPTER V

FINDINGS 2: TEACHERS

Introduction

The purpose of this chapter is to report the findings of the three teacher case studies which were initiated mainly to investigate the satisfaction/dissatisfaction level of the three teachers in respect to the implementation of the Nelson Networks Language Arts Program in grade one in September 1988. This program is based on the whole language approach to the teaching of language arts. The main concern of the teacher component of this study was the difference in the attitudes and satisfaction levels displayed by each teacher since the experience in teaching from the whole language perspective varied among the three.

The three teachers in the study were labelled teacher one, teacher two, and teacher three for the purpose of reporting in this chapter. Teacher one at the beginning of the school year 1988-89 had no experience with the teaching of whole language. All language arts teaching for that teacher was from the traditional basal reader perspective. Teacher two had worked from the whole language perspective for at least one year and was considered to have a minimal background in that approach. Teacher three had taught using the whole language approach for several years. This teacher was considered to have a sound background in the approach.

Findings

Two approaches were applied in gathering information from each teacher. In December of the school year each teacher was interviewed by the researcher using an interview schedule (Appendix C) in assessing attitudes on several aspects of the new program. In April of the school year each teacher responded to a questionnaire (Appendix D) which dealt with issues of satisfaction, dissatisfaction, motivation and instruction.

The following seven questions were addressed in the teacher satisfaction/dissatisfaction component of the study.

1. Will the most experienced grade one teacher of whole language be more satisfied with the Networks program than the least experienced teacher of whole language?
2. Will the teacher with the least experience in the teaching of whole language display greater frustration and dissatisfaction in implementing the Networks program than the more experienced whole language teachers?
3. Will the degree of satisfaction/dissatisfaction with the Networks program be responsive to the availability of materials?
4. Will the degree of satisfaction/dissatisfaction with the Networks program be responsive to the type, timing, and amount of inservice and/or staff development?
5. Will the degree of satisfaction/dissatisfaction with the Networks program be responsive to teacher perception of the willingness and ability of the principal to give

support at the implementation stage of the Networks program?

6. Will the degree of satisfaction/dissatisfaction be responsive to teacher perception of how clearly the Networks program is structured?

7. Will teacher perception of the degree of implementation be responsive to knowledge of, and experience with, whole language?

To facilitate the discussion of the findings each of the above questions will be discussed separately. The initial contact with the teachers was through the interview schedule, therefore the findings from that source will be presented first. Information from the interview indicated that the two teachers with experience in the teaching of whole language were more satisfied at that point in time than the teacher with no whole language experience. In responding to the question, "Do you believe that you understand the whole language philosophy on which the new program is based?", the two experienced teachers expressed a feeling of satisfaction. However, teacher one felt her knowledge base was very limited. This feeling seemed to be reflected in several of her responses.

The degree of satisfaction for the three teachers came through as well in response to the question of how adequate they felt in dealing with the new program. Teachers two and three felt comfortable with what they were doing. The response of teacher one to the question revealed a degree of insecurity and dissatisfaction. "I am doubtful to be quite

honest. Some days I go home and ask myself did I do justice to the program because there are times I feel that some kids aren't getting out of it what they should."

While it was not difficult to detect from the interview schedule a higher satisfaction level for teachers two and three than for teacher one, the difference between teachers two and three was not so clear. Yet, as of the time of the interview, the most satisfied teacher appeared to be teacher two. Responses to the two questions dealing with problems and workload in the view of the researcher was indication of the satisfaction level of the respondents. Teacher two identified no problems and reported that the workload was reduced with regards to preparation. However, teacher three identified student evaluation as a concern and potential problem and felt that the preparation workload was increased. Likewise, teacher one reported an increase in the preparation workload and saw invented spelling as a potential problem. In answering question one of the study from the information collected through the interview schedule it was concluded that while the most experienced teacher of whole language displayed more satisfaction than the teacher with no experience, the difference between the satisfaction levels of teachers one and two was marginally greater than that between teachers one and three. Some of the same concerns were shared by both teachers one and three.

Question two of the teacher model of the study was addressed in the above discussion. Teacher one displayed

more frustration in implementing the Networks program based on information from the interview schedule than did the two teachers with whole language experience. However, the questionnaire results indicated negligible differences between teacher one and teacher two regarding satisfaction or dissatisfaction.

In responding to the question from the interview schedule on the availability of materials, teachers one and three indicated some dissatisfaction with the materials. Both identified the 25 percent of enrollment allocation for the independent anthologies as a drawback to the program. The sharing of these anthologies between two grade one classrooms compounded the problem even more according to both teachers. When asked if sufficient materials were supplied with the program teacher one responded, "No. I am not even pleased with the materials--especially with the anthologies. We have six for a class of 21. . . . We have one set of tapes for two classrooms. They are important." The response of teacher three was similar but less emphatic. "There are ten anthologies for two classes. It's nice to share reading but it's also nice for them to have a book to call their own. There are times when I like to have them that I don't have them. It affects scheduling." On the other hand, teacher two was satisfied with the availability of materials.

In answering question three of the study, based on these observations and the discussion of question one of the

study, the researcher concluded that the availability of materials impacted upon the degree of satisfaction/dissatisfaction. Teacher one, who displayed lowest level of satisfaction, saw problems with the materials as did teacher three whose satisfaction level was slightly lower than that of teacher two. However, teacher one was more emphatic in her response.

In addressing question four from this component of the study it was found, based on the responses from the interview, that the type, timing, and amount of inservice and/or staff development played a role in the satisfaction level. The least satisfied teacher in December of the school year displayed dissatisfaction with inservice. In her responses to the interview on this issue she indicated that the one-day inservice sponsored by the school board up to that point in time was insufficient and untimely. In her opinion, the first inservice should have been given in the spring of the previous school year rather than a month after the new school year began.

Teacher one also showed displeasure in the fact that she had been given information about the program before the inservice but that information proved to be erroneous after the inservice. ". . . if we had been put straight--instead of telling us one thing and then changing." It appeared that this fuelled the frustration level of a teacher already somewhat dissatisfied with the new program. Teacher one favoured inservice which accommodated both the lecture

aspect and interaction among teachers. During the inservice there was no opportunity to partake in discussion with other teachers. In the words of teacher one, "The best people to learn from is each other."

Teachers two and three saw the importance of inservice and indicated that the timing could have been better; however, they felt the one-day session was sufficient. In responding to the importance of inservice teacher two replied, "Yes it is important. But I don't think you need it too long. You should have a little bit before you start the program." The response of teacher three was similar. Both preferred a combination of lecture and discussion with colleagues. The concern of teachers two and three for inservice was by no means as pronounced as that of teacher one.

Question five of the study investigated the role of the principal during the implementation stage of the program in order to determine if the teachers' perception of the principal's support was related to the level of satisfaction. Again, teacher one displayed stronger sentiments toward the support received at the school level. While she believed that support was important and that she was getting adequate support from the board level, she felt that at the school level it could be improved. In her words, "There is room for more involvement." In response to the interview question, "Do you believe that you are getting sufficient support from your principal?", her reply was blunt: "No. He hasn't attended any inservice sessions. There is no primary grade

involvement." For these reasons she felt that the principal was unable to give advice when questions arose concerning some aspect of the new program. When concerns arose other teachers or the primary language arts coordinator were consulted.

Teacher two saw support as important but felt that her principal was unable to assist her in matters concerning the Networks program. She expressed the opinion that most principals were high school or elementary trained and were incapable of dealing with young children. However, she felt that the principal provided moral support.

Teacher three, on the other hand, was highly confident in her principal's ability to assist in matters concerning the new program. The principal was the person she would consult first regarding issues with the program. She was also quite pleased with the moral support provided by the principal, as is indicated in the following statement: "Well, the principal comes in and asks how things are going. . . . Things she notices she'll come in and make comments. She lets the children know that the things they are doing are noticed." In the opinion of the researcher, the teacher perception of the support provided by the principal had a direct effect on the level of satisfaction.

All three teachers in discussing the structure of the Networks program saw no problems with it. The fact that the skills approach was replaced was not an evident concern. Teacher perception of the program structure did not appear

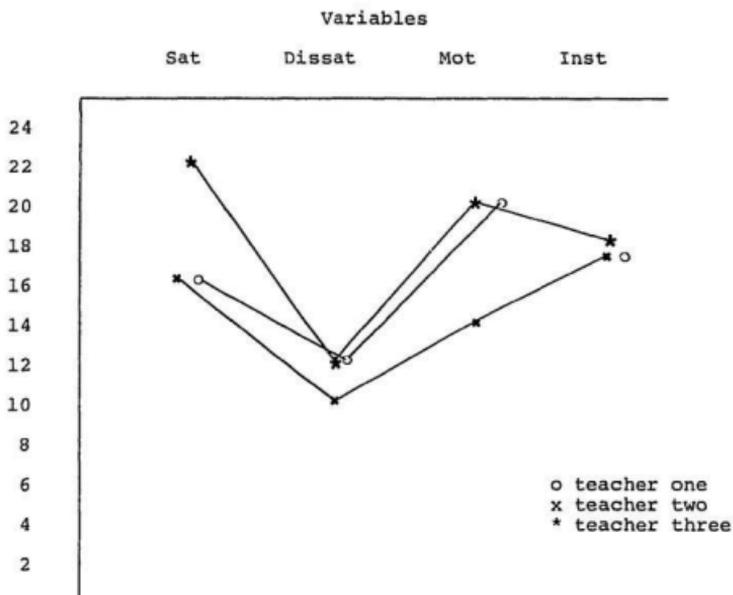


Figure 13. Graphic representation of teacher scores on the questionnaire for the variables satisfaction, dissatisfaction, motivation, and instruction.

Note: Sat = satisfaction
 Mot = motivation

Dissat = dissatisfaction
 Inst = instruction

to be a significant factor in the level of satisfaction.

The final question in the teacher case studies investigated the teachers' perception of how effective they were in implementing the program and if the perception was related to the experience with whole language teaching. Based on the responses it was concluded that teacher perception of implementation was not related to experience with whole language. In responding to the question, "Do you believe that you will become more effective in the teaching of the whole language philosophy as time progresses?", teachers one and three felt that they would become more effective over time. Teacher one responded, "I think so. As a matter of fact almost every day I am more pleased with myself." However, teacher two felt that she was doing all she could do in implementing the program. She did not see time as a factor.

In order to assess the overall attitude and satisfaction level of the three teachers toward the end of the school year, a questionnaire was administered to each teacher in late April. Data gathered from the questionnaire in April appeared to detect a change in the satisfaction level of teachers one and three. Based on the score calculated for each teacher on the six satisfaction items in the questionnaire, teacher three scored a total of 22 out of a possible total of 24 whereas teachers one and two received identical scores of 16 (Figure 13). There was no significant difference in the scores for the dissatisfaction items. From these results, teacher three was more

satisfied with the program than teacher two while teacher one displayed as much satisfaction as teacher two.

Two other variables of the questionnaire were motivation and instruction. The motivation scores of 20 out of 24 were identical for teachers one and three. Teacher two scored lower at 14. At this point in time it was clear that teacher three was experiencing a satisfaction level higher than the other teachers and at the same time was highly motivated. On the other hand, teacher two, who had minimal experience with whole language instruction, was experiencing a similar satisfaction level as teacher one and at the same time had a lower motivation level. The scores on the instruction variable were similar for all three teachers.

Findings Summary

Information gathered from both the interview and the questionnaire suggested that the teacher with the most experience in the teaching of whole language was the most satisfied with the new Networks program. Even though teacher three may have displayed a level of satisfaction slightly lower than that of teacher two earlier in the year, results of the questionnaire confirmed her satisfaction with the new program. Teachers one and three showed a higher level of motivation than teacher two.

Results of the interview showed that teacher one with no experience in whole language instruction encountered more frustration and dissatisfaction initially in implementing

the new program than did either of the other two teachers. However, there appeared to be a shift in attitude at the end of the year.

The availability of materials, the type, timing and amount of inservice, and teacher perception of the principal's willingness and ability to aid in implementing the new program all played a major role in the satisfaction/dissatisfaction level with the new program. Teacher perceptions of the structure of the program did not appear to be a factor. Teacher experience with whole language instruction was not a factor in teacher perception of the degree to which they had implemented the program. There was no trend in the responses to the related question which supported experience.

CHAPTER VI

SUMMARY, CONCLUSIONS, IMPLICATIONS AND FURTHER RESEARCH

The purpose of this chapter is to summarize the study and present the conclusions drawn from it. The theoretical and practical implications emanating from this study will be discussed as well. Finally, suggestions will be presented for further research in extending the present study.

Summary and Conclusions

The central issues to the student achievement model of this study were the effects of treatment on achievement in reading comprehension, vocabulary, and writing. The treatment in this case was the experience in the teaching of whole language. One class received instruction from a teacher with no experience in whole language instruction. Another class received instruction from a teacher with minimal experience in the teaching of whole language, and a third class received instruction from an experienced teacher of whole language. It is important to note, however, that in this study, as in many quazi-experimental designs, the specific treatments--namely, the ways in which the three teachers actually implemented the new curriculum--were not under research control. Since the curriculum change was mandated by the Department of Education, Government of Newfoundland and Labrador, it can be safely assumed

that the teachers implemented the new curriculum; that they utilized the new curriculum materials; and that they did so in an authentic manner. In other words, this study does not question the professional integrity of the participant teachers. Hence, the conclusions which follow are based on the strong assumptions that mandated curriculum changes were authentically implemented.

In view of the findings on reading achievement, it appears that experience in the teaching of whole language has no direct bearing on reading comprehension. There was no significant relationship between treatment and reading comprehension. The researcher gave two possible explanations. First, the whole language approach to reading can be as effectively taught by a teacher with no experience from that perspective as by a teacher experienced in whole language instruction. If this is not the case, then another plausible explanation is that in the short term there is no advantage in teaching reading from the whole language perspective over that of the traditional basal method.

Other findings on reading achievement point to previous reading achievement as a strong indicator. Reading at the beginning of grade one had a strong relationship with that at the end of grade one. Age effects on reading achievement were significant. This rejects the hypothesized effects but supports claims from the literature which suggests that younger children, especially early school age children, will lag behind older children in the same grade in terms of achievement.

The vocabulary achievement analysis results showed one significant relationship. When controlling for writing at the beginning of grade one, treatment, sex, and age, a strong relationship was found between reading achievement at the beginning of grade one and vocabulary achievement at the end of grade one. Previous reading achievement, then, is a strong predictor of sight vocabulary.

Results on the analysis of writing achievement provided findings which warrant some consideration. The initial regression analysis showed that when controlling the independent variables of writing at the beginning of grade one, reading achievement at the beginning of grade one, sex, and age, the effects of treatment came through fairly strongly. Students receiving instruction from the most experienced teacher in the instruction of whole language scored higher in writing achievement than the two other groups. Subsequent to this finding, a second regression analysis was done in order to investigate the components of writing which were affected by treatment. The second analysis indicated that sentence structure and vocabulary achievement was better for students instructed by the teacher with the most experience. However, the significance level for the relationship between treatment and story structure, while not significant, was in the right direction.

A limitation of this study, however, did not allow the researcher to reach a firm conclusion on the results which were in favour of the teacher with the most experience in the

whole language approach. The analysis did not permit for the control of class size when testing for the relationships in the study. The significant relationship was for the teacher with no experience in whole language. There was no trend which indicated that the teacher with the minimal experience had a greater effect than the teacher with no experience. Yet, the experienced teacher effects were above that of the other two.

The critical question, then, is whether the effects can be attributed to actual teaching effects or class size? With the inexperienced teacher in whole language and the experienced one showing the significant relationship and with both having classes of 21 and 17 students, respectively, which were much smaller than the 31 of the teacher with minimal experience, it was impossible to answer the question based on the analysis carried out in this study. However, results of two recent studies (Smith, 1989, and Mercer, 1989) carried out to determine the effects of whole language on the acquisition of literacy found that writing achievement improved as a result of whole language instruction.

Smith (1989) reported that children who were taught from the whole language approach made greater gains in writing achievement than those taught from the traditional basal approach. Mercer (1989) replicated this finding in a study which found that preschoolers who received whole language instruction showed greater achievement in writing.

The second regression analysis provided other results which deserve some attention. Contrary to the hypothesized

effects of sex differences on writing ability, it was found that these effects were significant in favour of girls for the vocabulary and communication components of writing. These results seem to support the claim reported by Beattie (1970) that the differences in achievement between boys and girls upon school entry was as great and in some cases exceeded the difference between younger and older entrants especially in language skills.

The effects of previous reading achievement on writing (in this case the communication component) were found to be significant. This finding supports earlier research which identified a positive relationship between writing and reading ability (Woodfin, 1968; Maloney, 1967; Grimmer, 1970).

The results of the teacher component of the study revealed some findings which deserve more discussion. While it was clear that the inexperienced teacher of whole language displayed more dissatisfaction earlier in the year than the other two teachers, her commitment to the new program was no less than that of the other two teachers. All teachers expressed their desire to continue with the program.

It is the opinion of the researcher that the two-factor theory of Herzberg, Mausner, and Snyderman (1959) discussed in chapter two may explain why teacher one with no experience in the teaching of whole language displayed displeasure with the program but remained committed to it. Teacher one was not necessarily dissatisfied with the job itself, in this case the new language arts program, but was dissatisfied with the conditions under which she had to deal with the program.

Concerns over school-based support especially from the principal, the availability of materials, and the level of inservice seemed to have contributed greatly to the satisfaction level of teacher one.

The fact that the satisfaction level displayed by all three teachers changed somewhat as the year progressed warrants some consideration. Early in the year teacher two showed a satisfaction level marginally higher than that of teacher three, yet toward the end of the year teacher three was reporting a much higher satisfaction level than either teacher one or teacher two. At the same time, teacher one and teacher two had similar satisfaction levels and teachers one and three showed a higher level of motivation than teacher two (Figure 13).

After some consideration, the researcher reached a conclusion to explain the change in attitudes of the three teachers. It appears that teacher three, the most experienced in the teaching of whole language, was a little more critical of the program initially. Having experience with whole language she was more cautious than one would expect. However, as time progressed she became less critical and cautious, thus resulting in a higher level of satisfaction. Her experience with whole language was an asset once she had evaluated the new program and found it to be acceptable. This change was also evident in the level of motivation.

The researcher believes that the satisfaction level of teacher two did not change, or if it did the change was negligible. This conclusion is based on the belief of

teacher two that she did not believe that she would improve her ability to teach the program as time passed. It is likely, therefore, that this attitude did not allow for an increase in the satisfaction level. This teacher had made up her mind that what she was doing was the extent of her ability. The rewards of teaching the new program would be no better at the end of the year than they were at the beginning of the year. If a change did occur in the level of satisfaction it would likely be negative.

An important observation from the questionnaire later in the year was the fact that teacher one was as satisfied as teacher two and showed greater motivation than her colleague. Just as teacher three showed caution and was a little critical of the new program, so did teacher one. However, unlike teacher two, she had more to look forward to. Self-efficacy (the confidence in one's ability to handle things in the classroom), according to the research literature, plays a big role in teacher attitude (Ashton, 1984; Sparks, 1988). While teacher one did not feel comfortable and displayed some frustrations initially, she did believe that her performance would improve over time. In believing this, her confidence level improved, she became more satisfied with herself and, as a result, became more satisfied and motivated overall.

Theoretical Implications

Students

The purpose of this study was not to evaluate the whole language theory but rather to evaluate the effects of

teacher background in the teaching of whole language. There were two main concerns--the effect of teacher experience in the teaching of whole language on student achievement in reading comprehension, vocabulary, and writing and the satisfaction/dissatisfaction level in relation to teacher experience with whole language.

Some of the findings in the student achievement model, however, have implications for the whole language theory. Psycholinguistic theory out of which the whole language approach to language arts developed sees all components of language as interrelated. The findings of this study support that view somewhat. Whereas the prior writing achievement of grade one students did not show a significant relationship with reading achievement, prior reading achievement did show a significant relationship with writing achievement. Prior achievement in this case refers to achievement at the beginning of grade one. It appears, then, that reading achievement is a predictor of writing ability. If this is the case, then problems with writing can be detected fairly early in school age children. A potential problem in reading will likely signal one in writing. This will allow early detection and the implementation of remedial help for such students.

Probably the most important finding in the study on student achievement was the effects of treatment on writing achievement. While the students receiving instruction from the most experienced teacher of whole language showed greater gains in writing achievement, as discussed earlier

it could not be determined by this study if the gain could be contributed totally to treatment. However, the finding cannot be ignored in light of the findings from two earlier studies which showed that whole language instruction is most effective in the area of writing. Students, then, receiving instruction from teachers who do not possess a sound background in the processes involved in writing as set out in the theory of whole language, may suffer a loss in writing achievement especially in the vocabulary and sentence structure components of writing. From a writing achievement perspective, it appears that the advantages of whole language will be realized only through sound instruction from experienced whole language teachers.

The claim by whole language proponents that reading can be effectively taught only through a rich understanding of the processes involved in reading--in other words, a sound background in theory of whole language--was not supported in this study. Given the strong assumption discussed at the beginning of this chapter, the implications here for whole language are that teachers who are teaching whole language for the first time are just as effective in reading instruction as are the experienced teachers. Thus, from the reading perspective the teacher of the traditional basal approach can adjust to the whole language approach without a detrimental affect on the reading achievement of the students. An important observation from the teacher interviews revealed that all three teachers were confident that their students were enjoying the whole language approach. This

speaks loudly for whole language. The ultimate goal of any program is student content and enjoyment.

Teachers

The findings of the teacher satisfaction model point to the need for a good background in the theory of whole language in order for teachers to be comfortable and at ease with that approach to language arts. It appears that if teachers are to create an environment in which they feel comfortable with their performance, they must first of all develop a deep understanding of the theory on which whole language is based. In the present study all teachers concluded that the whole language approach was superior to the traditional approach. Nevertheless, teacher one, at the beginning of the school year had some reservations and expressed some dissatisfaction. This seemed to be rooted in her lack of understanding of the approach.

Evidence from the teacher component of the study seems to support the claims found in the research literature; that is, most new programs require time to be fully understood and implemented. The results of the teacher interview and questionnaire show that this seems to be true for the Networks program in grade one. The teacher with no experience in whole language showed a greater degree of satisfaction with the new approach toward the end of the school year than at the beginning. Whole language is not an approach that can be grasped quickly and at the same time implemented effectively. However, a good theoretical background makes

for a more comfortable attempt at putting it into practice.

An important implication for the whole language theory involves the role of the principal in the implementation stage. From the teacher component of the study it became obvious that a teacher's perception of the principal's ability to assist in matters of whole language instruction was a factor in the satisfaction displayed by teachers. Principals, according to teachers one and two, in their case, had no background in whole language theory and, therefore, could not offer any practical advice in implementing the program. It appears, then, that principals should be given the opportunity or take it upon themselves to become familiar with the whole language theory in order that they be able to offer assistance to teachers when the need arises.

Another finding in the teacher component of the study revealed that the three teachers in the study taught under different school settings. Teacher one taught in a school with grades from kindergarten to six which had a principal with an elementary teaching background. Teacher two taught in a school with grades from kindergarten to eight which had a principal with high school training. On the other hand, teacher three taught in a primary school with a primary trained principal. In view of the fact that teacher three was more satisfied and more confident with her principal's ability to assist her in dealing with problems that might arise, implementation of the whole language under these conditions is likely to run smoother and more efficiently

than in the cases of teachers one and two.

Practical Implications

Out of the three areas of language arts investigated in this study, only writing ability showed a significant benefit over and above the other two areas as a result of treatment. The practical implications of this finding is one of self-evaluation to determine what is missing in the instructional aspect of writing. Teachers attempting to teach from the whole language perspective for the first time, or even teachers with minimal experience in whole language instruction, should be monitoring their classroom activities in an attempt to determine the quality of writing instruction. A very useful aid to teachers is Experiencing Language, the primary Language Arts Guide Highlights put out by the Department of Education in 1988. This guide outlines practical ideas which promote effective writing instruction. Some of these suggestions include journal writing, ways of observing children and how to act on these observations in aiding children to become writers, and the involvement of the parents in promoting writing both at school and at home. This guide can serve as a reference for teachers to evaluate their classroom instruction in writing.

Another practical implication for teachers with little or no experience in the teaching of whole language is to seek help and suggestions from teachers who are experienced in the whole language approach. Although there is no firm conclusion, it appears from this study that the experienced

teacher of whole language may have more to offer the process of writing than the less experienced teacher. If this is the case, then, they may have some practical ideas to pass to the less experienced teacher. Sharing of ideas and providing support for each other can be an effective way in becoming a more critical observer of one's performance in the classroom, thus contributing to the quality of instruction. Opportunity should be provided for this exchange of knowledge.

During the teacher interview and from the questionnaire it became apparent that student evaluation in whole language programs was a concern for both the experienced and inexperienced whole language teacher. However, it appeared to be of greater concern for the least experienced teacher of whole language. The previous method of assessing student progress was usually in objective form which allowed the teacher to determine if a student had achieved a certain level. Whole language instruction does not accommodate such an evaluation system. However, for the new teacher of whole language, Experiencing Language (1988) provides some practical guidelines for effective student evaluation. These include observations (undirected and directed), anecdotal records, language checklists, personal folder or treasure box, conferencing, and oral reading.

If whole language is to be implemented in an atmosphere which fosters teacher contentment and satisfaction, then there are some changes which must be considered before that can happen based on the findings of this study. Materials

which are recommended in order for teachers to put the whole language theory into practice must be available. From this study it was obvious that the availability of materials played a major role in the frustration and dissatisfaction displayed by teacher one. The agencies responsible for the supply of such materials to the school must make every effort to see that these are made available in ample quantity so they are there when required.

The type and timing of inservice for the implementation of the Networks program initially proved to be a genuine concern of the teacher with no whole language experience. If teachers are expected to implement the whole language program, it seems appropriate to introduce them to the program in time to allow them to examine and evaluate it. In other words, they should have an initiation period to give them a general idea what the program entails. This must then be followed by adequate support from both levels--the school board and the school. All three areas are important in developing a positive attitude in teachers which reflect the satisfaction and ease with which they approach whole language instruction.

Suggestions for Further Research

One limitation of this study was the variable of class size which was not controlled. It was therefore impossible to ascertain if the significant effects of writing was attributable only to the treatment: that is, experience in the teaching of whole language. To control for class size a

similar study could be carried out on classes similar in size.

To further test the effects of experience in the teaching of whole language, this study could be extended to include the same three teachers and their grade one classes of the next school year. All three teachers would have some experience in whole language instruction, thus allowing for an investigation from a somewhat different perspective as to the effects on student achievement and teacher attitudes.

In September 1989, the Networks program will be introduced in grade two. This provides an opportunity for a study similar to the present study to determine the effects of experience in the teaching of whole language on grade two students. Even though all students will have been exposed to whole language instruction in the previous year, there will be grade two teachers in the province who will be approaching the teaching of whole language for the first time.

To extend the research on teacher satisfaction/dissatisfaction levels with the teaching of whole language, a random sample of all grade two teachers in the province of Newfoundland and Labrador could be administered a questionnaire in order to determine their experience with whole language and their attitudes towards that approach to teaching language arts. Identification of any potential problems with the Networks program in grade two could be also evaluated through the same questionnaire.

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APPENDIX A

Central Points Recognized by the Whole Language Philosophy

- All language processes interact.
- Language is for making meaning.
- Language is functional; therefore, it is important that classroom environments provide meaningful purposes for language use.
- Skills are learned in context.
- To understand print, children use three different kinds of information:
 - background experience, context clues (semantic cues)
 - knowledge of how language works: word order, sentence structure, etc. (syntactic cues)
 - knowledge of print symbols, picture clues, configuration clues, etc. (grapho-phonemic cues)These cues are used simultaneously as the child reads and writes.
- Children need quality language models.
- How the process of language is important as well as the product.
- Children need to experience the joy of sharing in stimulating and challenging language classroom environment that make Whole Language come to life.

APPENDIX B

The Shift in Focus in Adopting a Whole Language Philosophy

The move will be:

- From teacher centred and text centred to child-centred.
- From limited materials and controlled vocabulary to rich and varied materials.
- From a rigid curriculum to a developmental curriculum.
- From form correctness (product) to form follows function (process and product).
- From grouping by ability to grouping by needs and interests.
- From rigid timetabling of each language art to integrated language learnings and language used for learning.
- From assessment only at end of unit or end of school term to ongoing monitoring of children's language development.

APPENDIX C

Teacher Interview Schedule

Part I

The Program

Do you believe that you understand the whole language philosophy on which the Networks program is based?

Is it different from the previous program you were using? In what way?

Do you identify any problems with the Networks program? What are they?

Has your classroom environment (seating arrangement, wall charts, print materials) changed? How?

Were you prepared for the implementation of this new program?

How adequate do you feel in implementing the program? Are you comfortable with what you are doing with the program?

If you had a choice would you continue with this program or go back to your previous program? Why?

How do you feel at this point in time compared to how you felt at school opening in September?

Have you had any response from other teachers?
(favourable or unfavourable)

Does the program give you a high degree of direction or are you left to interpret and carry out the instruction on your own?

Do you believe that the whole language approach is a fad?

What is your reaction to the fact that this new program was adopted by the department and you are expected to implement it?

Do you believe that this approach may be an indication that you have been teaching the wrong way in previous years?

Do you believe that you are expected to show an immediate grasp of the whole language approach?

Are skills taught in this new approach?

Has this program affected your workload? How?

Do you believe that you will become more effective in the teaching of the whole language philosophy as time progresses?

What do/will you look for to prove to or convince yourself that this approach is effective in teaching children language arts?

What is a typical day in your classroom?

Part II

Inservice

How much inservice have you been involved in for the implementation of the Networks program?

What type of inservice did you receive? (board level for all teachers/teacher interaction)

When did you receive the first inservice? Were you satisfied with the timing?

Do you believe that inservice is important? Why/Why not?

In what form should inservice be given? (practical activities/lectures)

Do you believe you get more from inservice or from colleagues?

Part III

Support

Do you believe that support from board office personnel, principals and other teachers is important?

Do you believe that you are getting sufficient support from board personnel?

Do you believe that you get adequate support from your principal?

Do you believe that your principal is able to help you when questions arise concerning some aspect of the new program? Why/Why not?

If concerns about the program arise, who do you consult?

Do you have access to literature on the teaching strategies of whc'le language?

Part IV

Materials

What types of materials are required for the program?

Are sufficient materials provided with the program?

Do you spend much time in preparing materials?

Are the materials always available?

Is the program dependent on outside materials?

Do you have access to good children's literature?

APPENDIX D

Teacher Questionnaire

This questionnaire is about your experiences with the teaching of whole language and your attitudes toward whole language instruction. There are no right or wrong answers. All your answers are confidential. The anonymity of subjects will be safeguarded both in the data gathering and reporting phases of the project.

Assess each statement by checking the response which best describes your experience.

	Definitely Agree	Mostly Agree	Mostly Disagree	Definitely Disagree
Whole language instruction has boosted my confidence as a teacher.	_____	_____	_____	_____
I would not have adopted whole language voluntarily.	_____	_____	_____	_____
I am highly motivated to use the whole language approach.	_____	_____	_____	_____
There are many rewards to be obtained from adopting whole language.	_____	_____	_____	_____
Whole language is fun to teach.	_____	_____	_____	_____

	Definitely Agree	Mostly Agree	Mostly Disagree	Definitely Disagree
Whole language instruction has increased my workload.	_____	_____	_____	_____
After this year, I have a strong desire to continue whole language instruction.	_____	_____	_____	_____
Whole language instruction relies on the teacher to supplement and enrich the curriculum.	_____	_____	_____	_____
Whole language should have been adopted by teachers years ago.	_____	_____	_____	_____
Whole language instruction has made my teaching more difficult.	_____	_____	_____	_____
If I had a choice, I would not use the whole language approach to language arts.	_____	_____	_____	_____

	Definitely Agree	Mostly Agree	Mostly Disagree	Definitely Disagree
I have difficulty evaluating whole language instruction.	_____	_____	_____	_____
Whole language instruc- tion has improved the standard of my students' performance.	_____	_____	_____	_____
Whole language instruc- tion is difficult to get used to.	_____	_____	_____	_____
I am determined to improve my whole lan- guage instruction strategies.	_____	_____	_____	_____
Whole language instruc- tion calls for more student management and control.	_____	_____	_____	_____
Whole language instruc- tion has proven to be easier to adopt than I first thought.	_____	_____	_____	_____

	Definitely Agree	Mostly Agree	Mostly Disagree	Definitely Disagree
Whole language has made me dissatisfied with teaching.	_____	_____	_____	_____
Being successful with whole language instruc- tion is important to me.	_____	_____	_____	_____
I possess an adequate repertoire of whole language strategies.	_____	_____	_____	_____
Whole language teaching gives me a sense of satisfaction.	_____	_____	_____	_____
It is discouraging to have a new program such as whole language forced on teachers.	_____	_____	_____	_____
Whole language instruc- tion is one of the most satisfying aspects of my grade one teaching.	_____	_____	_____	_____
Whole language lesson plans promote effective teaching strategies.	_____	_____	_____	_____



