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A COMPARATIVE STUDY OF THE EFFECTS OF TWO URBAN KINDERGARTEN BEGINNING READING PROGRAMS ON STUDENT ORAL READING PERFORMANCE AND ATTITUDES TOWARD READING

by
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B.S. May 1977, Old Dominion University
M.S. August 1981, Old Dominion University

A Dissertation Submitted to the Faculty of
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DOCTOR OF PHILOSOPHY

URBAN SERVICES

OLD DOMINION UNIVERSITY
December 1988

Approved by:

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ABSTRACT

A COMPARATIVE STUDY OF THE EFFECTS OF TWO URBAN KINDERGARTEN BEGINNING READING PROGRAMS ON STUDENT ORAL READING PERFORMANCE AND ATTITUDES TOWARD READING

Ann-Carol Banton Holley
Old Dominion University, 1988
Director: Dr. Maurice R. Berube

The purpose of this study was to determine the effect of the whole language and the Writing to Read beginning reading programs on oral reading performance and attitudes toward learning to read in school. The research population totaled 128 kindergarten students from two elementary schools within the same urban school system. This population consisted of a complete population sample of sixty-one students at the whole language school and sixty-seven Writing to Read students chosen by random selection to represent all classes and teachers at the other school.

Oral reading performance and attitude toward reading of the two groups were compared using the Mann-Whitney U test. The Kruskal-Wallis one-way analysis of variance was used to analyze attitude and reading ability as functions of socioeconomic status and also to analyze reading as a function of attitude. An analysis of variance then was used to support these nonparametric results.

The results suggest that the proportion of the whole language students who could read was approximately double that of the Writing to Read students. Also, there was a significant difference in student

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attitudes toward reading between the whole language and Writing to Read methods. However, this difference did not appear when examining attitudes by gender.

A detailed examination of student attitudes toward reading in relation to socioeconomic status (SES) demonstrated a significant difference between free and full-price lunch students. Further investigation of the method and SES variables suggest, however, that method was a much more significant source of variation than SES.

Oral reading performance was analyzed also in relation to attitude groups. However, a significant difference was not demonstrated.

The results of this study suggest that regardless of SES, the students who received whole language instruction had a statistically significant better attitude toward learning to read in school than was observed for students who received Writing to Read instruction.

Finally, these results suggest that the whole language approach is more successful in teaching beginning reading to kindergarten students in that thirteen (21.3%) of the sixty-one whole language students and only seven (10.4%) of the sixty-seven Writing to Read students could read. Also, the fact that the whole language approach is inexpensive, particularly in relation to the expense of the Writing to Read laboratory equipment, is of educational significance. Thus, regardless of SES or sophisticated technology, the whole language approach appears to be more successful in teaching the young child beginning reading while fostering positive attitudes towards learning to read in school.

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CHAPTER 1

INTRODUCTION

After the publication of several important national studies on education in 1983, the nation became aware of a pressing need for educational reform. One of the studies, A Nation at Risk: The Imperative for Educational Reform, the report of the National Commission on Excellence in Education, issued by the U. S. Department of Education in 1983, initiated debate on the status of education in America with the assertion that American education was threatened by a "rising tide of mediocrity."[1] The report stated that despite current education programs, 23 million American adults cannot read, write, or comprehend at a functionally literate level.[2]

Additional criticism concerning the education of the nation's youth was found in reports of the Twentieth Century Fund, the Carnegie Foundation, the National Science Foundation, and the Education Commission of the States.[3] Ravitch attempts to keep the debate that followed in proper perspective by noting that, in contrast to the despair of the 1960's and 1970's equity school reform movement, the national education reports were quite positive. In fact, she evaluates the reports as being supportive of the schools and respectful of their role in society, despite the cries for change.[4]

Research reported in Becoming a Nation of Readers: The Report of the

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Commission on Reading, completed in 1985, noted that the country receives the greatest return on its investment for education during the early years, because it is at this age that children first learn to read.[5] The report describes effective reading practices in an attempt to remove them from further debate and make these methods more accessible to practitioners.[6] Additionally, the report identifies practices found to be less useful in fostering beginning reading.[7] The encouraging message of the report is that the knowledge is available for improving reading instruction nationwide. Thus, the report's objective is to summarize recent reading research and present implications for improved reading instruction.[8] Much of the research cited in Becoming a Nation of Readers is supported by subsequent research studies of the Department of Education, which published What Works in 1986, a report summarizing studies on teaching and learning.[9] What Works presents an overview of educational research findings that are believed to be "consistent, persuasive, and fairly stable over time."[10]

Goodlad noted that student reading achievement facts were obscured in the furor regarding the school effectiveness reports. He reported that in 1970-71, 1974-75, and 1979-80, the National Assessment of Educational Progress found that nine-year-olds had improved their reading skills steadily between 1971 and 1980 with a 3.9 percentage point gain.[11] However, he also stated that a decline in secondary Scholastic Aptitude Test scores during the same period fueled additional controversary regarding the state of education.[12]

The Carnegie Forum on Education and the Economy, which issued the Report of the Task Force on Teaching as a Profession in 1986, holds that school performance must reach for greater gains than was addressed by the

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earlier school reform reports. This report states that much elementary and secondary education previously emphasized the development of routinized skills for an economy based on mass production. In today's economy, routine skills are no longer needed as much as are skills to perform non-routine intellectual tasks.[13] The educational and economic implications of this report are that our country's functional literacy problem must be corrected if we are to remain competitive with other countries whose work force has routine skills equal to and exceeding our own.[14]

Functional literacy is as much a state and local educational problem as it is a national concern. Maintaining and improving literacy is a complicated school issue, for, as Gwiazda states, schools are faced with the crisis of performing new and more complex tasks today.[15] This situation results in schools being charged with accommodating social as well as learning considerations, for recent changes in society have resulted in a student population comprising these statistics:

> One in five students lives with one parent. More than half of the children from one-parent families are poor. More than half (53 percent) of children who live with both parents come home to an empty house after school, as both parents work outside the home. . . . Teachers can expect to face children from poverty and broken homes as a matter of routine.[16]

School systems, therefore, must keep population changes in perspective when reviewing their curricula and adjust them accordingly. Teachers also must reconsider their curriculum objectives and have "different goals for different children because different children have different needs."[17]

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Problem Statement

Educators are faced with the dilemma of teaching increasing numbers of children who have minimal school preparation. Urban educators, in particular, are searching continually for new techniques to make their teaching more effective. Because reading ability is a measure of literacy, this study examines two new approaches for teaching beginning reading to young children, currently used in an urban school system. One approach, the whole language approach to teaching reading, simultaneously integrates the teaching of reading, writing, speaking, and listening within a context with which the language-learner can identify.[18] Advocates of this approach, Kenneth and Yetta Goodman, explain that whole language is a comprehension-centered method of teaching reading and writing and "is a natural extension of human language development."[19] The Goodmans state that the focus of whole language is always on meaning; it is a holistic program providing "integration of reading and writing with other language arts," taking into account the content of the curriculum.[20] Therefore, whole language instruction does not teach reading skills in isolation.

A newer approach to reading instruction, Writing to Read, is a computerized writing and reading program marketed by International Business Machines Corporation (IBM).[21] In this program, children first learn to write and then to read their own words through a multi-activity, multi-sensory approach to learning.[22] The materials used to facilitate this instruction include a computer station, a work journal station, a make words station, a writing station, and a listening library station. At the computer and work journal stations students are introduced to the forty-two phonemes (consonants, vowels, consonant and vowel digraphs) of

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English in structured lessons. The goal of this phonic instruction is to enable students to write what they say and to read what they write.

Both the whole language and Writing to Read programs introduce kindergarten students to beginning reading. These programs encourage children to experiment with oral reading by having them read dictated language-experience stories, expand the sentences in these stories into longer, more complex ones, and write and read stories they compose. The assumption on the part of the proponents of these programs is that varied informal oral reading experiences help young children make the transition from oral language to written language and facilitate early oral reading for kindergarten students.

Allington notes that numerous researchers regard oral reading fluency as a necessary skill when defining good reading.[23] It is also true that many teachers equate reading ability with fluent oral reading.[24] Therefore, it was determined that the oral reading performance of kindergarten students in the whole language and Writing to Read programs which this researcher studied would be assessed to evaluate the relative effectiveness of the programs in teaching beginning reading. For the purpose of this study, the oral reading ability of the students being evaluated was rated on the basis of the number of words missed in a text-referenced pre-primer or text-referenced primer reading passage.

Another area this study investigated was student attitudes toward learning to read in school. Student attitudes were evaluated at the end of kindergarten to determine if there was a difference in the attitude of the students in the programs being studied. Children enter school with various expectations regarding their learning experiences. For many children

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kindergarten is their first formal academic training. The child's impression of the first year in school is crucial. This is the time when attitudes toward learning in school are being formed.[25] The more positive children's first experiences of formal education are, the more secure they will feel in their new school environment, and, consequently, the more they will be open to taking risks when attempting to learn new skills in the classroom.

Durkin maintains that kindergarten teachers must be trained to teach reading to five-year-olds with methods that result in children's enjoyment as well as achievement.[26] Kennedy also supports the importance of pleasure when learning and notes that researchers often fail to include a study of student attitudes toward reading when conducting reading research.[27]

Though there is general agreement about the importance of positive attitudes to ensure successful reading, Alexander and Filler also state that this area of reading needs to be given more attention.[28] Therefore, student attitudes toward learning to read in school were evaluated for the two kindergarten programs addressed in this research to determine if these programs resulted in a difference in student attitudes.

Purpose

The purpose of this study is twofold. First, the researcher will determine if there is a significant difference in the effects of the whole language and Writing to Read beginning reading programs on the oral reading performance of kindergarten students in selected urban schools in Norfolk, Virginia. Second, the researcher will determine if there is a

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significant difference in the effects of the two kindergarten beginning reading programs on student attitudes toward reading.

Preparing children for beginning oral reading is the goal of most kindergarten programs. Therefore, measuring the impact of the two programs in achieving this objective will indicate how students in each program read relative to one another. Additionally, it is recognized that young children form an attitude toward school and learning through their first school experiences. Thus, the kindergarten experience can be instrumental in forming positive or negative attitudes toward learning to read.

The teaching methods employed in the two beginning reading programs are not the only variables potentially influencing student attitude and performance. The researcher will determine whether sex and socioeconomic status also may have an impact in these areas. Therefore, the research will include a study of both of these variables relative to student oral reading performance and student attitude toward learning to read in school. Data will be analyzed between the comparable groups of students being studied to see if reading performance and attitudes toward reading differ between males and females and among students of varying socioeconomic backgrounds.

Research Questions/Hypotheses

Research questions and specific hypotheses that will be addressed in this study are:

1. Is there a significant difference in oral reading performance between kindergarten students in the whole language and Writing to Read

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beginning reading programs as measured by individually reading aloud a text-referenced reading passage?

Hypothesis one: There is no significant difference in the oral reading performance of students in the whole language or Writing to Read beginning reading programs at the end of kindergarten.

Hypothesis two: There is no significant difference in the oral reading performance of males and females at the end of kindergarten.

Hypothesis three: There is no significant difference in the oral reading performance of students based on socioeconomic status at the end of kindergarten.

2. Is there a significant difference in attitude toward reading between kindergarten students in the whole language and Writing to Read beginning reading programs as measured by an individually-administered semantic differential instrument which measures the attitude factors of a specific concept pertaining to reading?

Hypothesis four: There is no significant difference in the attitudes of students toward reading in the whole language or Writing to Read beginning reading programs at the end of kindergarten as measured by a semantic differential instrument.

Hypothesis five: There is no significant difference in the attitudes of males and females toward reading at the end of kindergarten.

Hypothesis six: There is no significant difference in the attitudes of students toward reading based on socioeconomic status at the end of kindergarten.

3. Do kindergarten students who exhibit different attitudes toward learning to read show a significant difference in oral reading performance

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as measured by individually reading aloud a text-referenced reading passage?

Hypothesis seven: There is no significant difference in the oral reading performance of students exhibiting different attitudes toward learning beginning reading at the end of kindergarten.

Limitations

In this study there are confounding variables that are not controlled in relation to beginning reading instruction and student attitudes toward reading. According to What Works, a review of current research prepared by the United States Department of Education, the best way for parents to help their children improve reading performance is to read to them.[29] The researcher did not attempt to quantify the quality of the home reading experience of each child.

It was noted also in What Works that socioeconomic status does not impact greatly on learning if parents "discuss school events; help children meet deadlines; and talk with their children about school problems and successes."[30] Moreover, when parents of disadvantaged children participate in their child's learning to the extent just mentioned, their children can achieve at a level equal to the children from families with a higher socioeconomic status.[31] This study does not attempt to measure the depth of parent involvement in stimulating student interest in and attitudes toward reading nor the help provided by parents on beginning reading skills. Neither does the study attempt to ascertain whether males or females receive more encouragement from their parents to be successful readers.

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It is acknowledged that students who come to school with pre-school training may have an initial advantage over students who have not had this experience. In nursery school and day-care centers, children acquire many of the skills and much of the knowledge formerly not encountered until kindergarten.[32] Therefore, this confounding variable is not controlled as it relates to early readiness for reading. The use of comparable groups of students in each of the kindergarten reading programs will attempt to control for this potential confounding variable. Assessing the oral reading performance of comparable groups of students in the two programs should reduce the possible impact of socioeconomic differences which might be present between schools. Another factor which is not controlled is the difference in teacher enthusiasm, nor can the researcher fully determine how much time each teacher spends on teaching each subject area daily. Another limitation is that principal interest in and influence on the different beginning reading programs cannot be determined. Additionally, the researcher teaches at the whole language school.

Definition of Terms

Whole Language. In this study, the term whole language represents a holistic, integrated, and comprehension-centered method of teaching the language arts within a child-centered environment.

Writing to Read. The Writing to Read System, as referred to in this study, is a computer-based program marketed by International Business Machines Corporation (IBM) which uses a phonetic approach to teach children reading and reading skills through their writing.

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CHAPTER 2

REVIEW OF RELATED LITERATURE

The literature review addressed in this chapter provides the theoretical framework for the research presented in this study. The following topics are included in the literature review: (1) The Young Child and Reading, (2) Oral Language and Reading, (3) Student Attitudes and Reading, (4) The Whole Language Approach to Teaching Reading, and (5) The Writing to Read Approach to Teaching Reading.

The Young Child and Reading

The joint statement on Literacy Development and Pre-First Grade, prepared by the Early Childhood and Literacy Development Committee of the International Reading Association in 1986, confirms the need for children to have a supportive learning environment where positive attitudes toward literacy, language learning, and themselves can develop.[1] Ideally, this environment would provide children with the opportunity to combine play and learning while having their social, emotional, and intellectual needs met. Teachers who capitalize on the certainty that "play leads development" enable the young child to grow optimally.[2]

Unfortunately, the recent trend in kindergarten education has been to provide children with fewer play experiences and more skill lessons.[3] Thus, today's kindergarten curricula often resemble what formerly was

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considered first-grade instruction.[4] Educators who endorse accelerated teaching for kindergarten children, in contrast to accelerated primary instruction, must remember that young children need time to sort through and to experiment with new ideas before assimilating them. When young children are provided this necessary "practice time," they feel comfortable with what they have learned, and are eager for further learning.[5] Piaget's observations suggest that children develop in a hierarchy of stages and Fox states they "go though them invariably, although their rate of development varies."[6] Keeping Piaget's observation in mind, it follows that children's cognitive development is fostered when instruction is provided at a developmentally appropriate pace in a nurturing and flexible environment.

Cognitive development is to some extent dependent on intellectual maturity. Geller notes Piaget's research which documents a broad range of intellectual maturity in children which is seen through their varying development of intellectual perspective. In education, this developmental lag among children is evidenced through varying abilities to comprehend the relationship between numerical and written language symbols.[7] This observation is another argument for spending more time developing oral language abilities in kindergarten rather than stressing a more academic program. Teaching through language experiences that will help students know success is vital when there is really no way to accelerate the natural developmental stages of children.

Chall bases her stages of reading development on Piaget's model.[8] She proposes that reading development resembles Piaget's stages of cognitive development, and generally progresses in a hierarchy that reveals qualitative differences between the developmental stages.[9]

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The joint statement on Literacy Development and Pre-First Grade states that many young children are not receiving instruction that is appropriate for their age.[10] The study states that the result of pressuring children to achieve on standardized tests, which are frequently inappropriate for the five-year-old, has been a change in the content of the kindergarten curriculum. Curricula that are too concerned about test preparation often do not include enough divergent thinking skills and opportunities to promote creativity. Such curricula can result in the formation of negative attitudes toward language learning and retard language growth.[11] In fact, Durkin's recent research on "Testing in the Kindergarten" found that kindergarten testing is influencing instruction.[12]

Smith cites research which indicates that one way teachers can ensure that children's beginning reading experiences are successful is to give them metalinguistic and linguistic awareness training when they are ready to read.[13] Metalinguistic awareness is the "ability to direct, regulate, monitor, and evaluate one's own language."[14] Children who cultivate this skill, perform significantly better in beginning reading because they know how to think and talk about language.[15]

In addition to general physical and intellectual maturation, beginning reading is especially dependent on the development of perception skills. More specifically, certain auditory and visual perception skills have been found by researchers to be good indicators of successful beginning reading. Among these is the ability of children to perform visuo-spatial tasks which show whether or not children can visually differientiate the relative position of objects (e.g. objects upright versus non-upright; upside down versus sideways; and left versus right, in that hierarchial order).[16] Letter

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recognition is another factor which signals that a child's visual perception has matured.[17] Some researchers have observed that visual perception appears to be linked developmentally to Piaget's observation that children learn to differentiate things before they learn the names for them.[18] This suggests that children who are required to perform academically before developing the necessary perceptual skills find learning frustrating.

Auditory perception is another process that plays a vital role in beginning reading. An understanding of how this process works is found in its definition: "the intelligent interpretation of the sound waves picked up by the ears."[19] In beginning reading, the application of this skill is a child's ability to associate the sound units of a word to the letter/s that represent/s the sound. Research in What Works reveals that children who acquire this phonic ability learn to read better.[20]

The importance of the auditory and visual processes for successful beginning reading necessitates teachers providing instructional approaches that use much review and reteaching of concepts. Repetition allows for the varying maturation within a group of children and, therefore, helps slow learners as well as slow-developing children. The complexity of the teaching/learning process is best illustrated using Durkin's definition of reading readiness, as cited by Smith:

> Each child's capacity at any given time is the product of an interplay among genetic endowment, maturation, experiences, and learnings. What learning to read demands of children is dependent upon both the kind and the quality of instruction.[21]

As indicated previously, teachers must provide a learning environment that encourages children to take risks and experiment with concepts while internalizing learning. This learning environment includes

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teachers providing an instructional climate that is rich in oral and written language to promote language development. Urban teachers, in particular, must be sensitive to the diverse cultural differences and varying language needs of their students in order to provide them appropriate reading instruction. Collectively, this means that a kindergarten teacher's mission is multi-faceted. Not only must kindergarten teachers provide a productive learning environment, but they also must serve as language models, help "children learn how to learn" and, ultimately, are responsible for planning a developmentally appropriate instructional program.[22]

Oral Language and Reading

Young children bring to kindergarten numerous experiences which are the foundation for building their concepts about the uses and functions of language.[23] Exploring and using oral language builds on these experiences in kindergarten and is an important aspect of instruction when preparing students for beginning reading. Children's ideas about oral language and written language stem from their real and fantasized childhood experiences. Children value their speech, and because of their self-centered natures, they see their speech as an extension of themselves. Therefore, children are serious communicators who expect others to understand what they are saying because their spoken messages hold much personal meaning.[24]

Observers of children know that young children traditionally use oral language as a means of informal reading readiness preparation as they teach one another nursery rhymes, riddles, games, and jokes.[25] It seems reasonable, then, for beginning reading instruction to include oral reading opportunities in order to provide children with a natural transition from

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spoken to printed language.[26] In relation to this, Taylor suggests that oral reading may afford a developmental purpose for young children.[27]

Teale notes that research indicates that children develop listening, speaking, reading, and writing skills "concurrently and interrelatedly in early childhood."[28] This research suggests that teachers encourage children's continued oral language development in preparation for beginning reading as mastery of spoken language prepares children for reading printed language and promotes successful beginning reading. As Durkin has observed, if "children are going to learn to read, they have to learn to talk."[29]

Karen Zelan shares Durkin's concern that children learn in their natural developmental hierarchy. She states that instruction should be planned according to a child's developmental capabilities and from a child's perspective. This means that it is important to remember that because of early experiments with conversation, young children expect oral reading and talking to be similar.[30] To foster continued oral language growth and prepare children for beginning reading, early childhood educators must understand language development from a child's perspective and plan oral reading experiences that reflect an understanding of how the young child learns.[31]

The emphasis on oral reading when children are beginning to learn to read gives children the opportunity to model the early reading done by parents, siblings, and teachers and provides them with immediate feedback on their performance.[32] It is not unusual for young children to read as though they are talking to their teacher when reading aloud. It may be that beginning readers who feel as though oral reading is a form of conversing

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make careless mistakes due to their total immersion in what they are reading. Careful observers realize that such mistakes do not reflect the reader's ability accurately, but rather are a result of the reader's keen interest in the theme being read.[33] When this situation occurs, play has merged with learning.[34] Curricula that unite play and learning facilitate children's transition from spoken to written language.[35]

Children sometimes do not think of reading as a means of enjoyment, though learning to read should be fun.[36] Since oral reading offers beginning readers the opportunity to be seen performing while learning and to receive the approval of those around them, it can be a gratifying experience for the egocentric kindergarten-age child.[37] Thus, it is important for teachers to promote reading as a pleasing activity through providing varied early oral reading experiences to help children make the play-to-learning transition that is vital in producing serious students and self-motivated readers.[38]

The growth students derive from their own oral reading and that of others is an important consideration when preparing students to become good readers. Students need the opportunity to practice their oral reading in order to learn to read well. Practice facilitates the transition from oral to silent reading and promotes fluent readers. The opportunity for oral and silent reading practice time is an important variable that teachers control in the classroom.[39]

As noted before, oral reading fluency is regarded as a necessary skill when defining good reading.[40] Allington states that fluent oral reading is the result of practicing pitch, stress, and juncture. He discusses research which notes that written English has few cues for these prosodic features of language. When speaking orally, pitch, stress, and juncture are used to

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indicate phrase boundaries. Allington reports that young children rely heavily on the prosodic features of oral language in order to understand speech.[41] Thus, it seems that the transition from oral to written language is facilitated by young children being encouraged and given numerous opportunities to model adult use of oral language.[42]

In taking a closer look at the importance of fluent oral reading, Anderson indicates that programs that emphasize mastering reading skills in isolation may fragment the instruction of developmental reading.[43] The joint statement also speaks to instruction that focuses on teaching isolated reading skills to the exclusion of integrating oral language, writing, and listening skills with reading instruction. It recommends that instruction should focus instead on children's knowledge of language and provide them with meaningful oral and written language experiences.[44] It is probable that teaching reading skills in isolation interfers with students acquiring the ability to read fluently and produces students with poor reading comprehension.[45] Additionally, the enjoyment of reading being a meaningful experience unto itself is neglected when children see reading primarily as means of skill development.[46] This is particularly true for kindergarten children who are introduced to isolated reading skills in preparation for first-grade instruction at a time when they are still developing in numerous ways. At this age it is important to view the written language of reading for what it is: the preservation of oral language, which is richly illustrated through hearing old fairy tales and folk tales read.[47]

The benefits of regular oral reading by teachers to students include improving reading and listening comprehension; expanding language and

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vocabulary development; encouraging students to read more; exposing children to a variety of literature; modeling the richness of numerous styles of written language; and stimulating children's imaginations.[48] Teale expands on the comprehension assessment opportunities for teachers who read aloud to students, and notes that teachers can quickly and informally critique children's understanding of unfamiliar vocabulary, a story's sequence and structure, and a child's ability to retell the story by assessing them while reading aloud.[49]

Student Attitudes and Reading

Children's attitudes are shaped from birth. This is also when children start literacy learning.[50] Parents foster the early social, emotional, intellectual, and physical development of their children, and continue supporting and encouraging this growth throughout the child's school years. It is not surprising, therefore, that children form conceptions about reading as early as the age of two to three years, and come to school already interested in and thinking about reading.[51] This indicates the importance of the early school experiences of children because they are the foundation for the child's interest in learning within the school environment.

A child's attitude toward learning to read has been defined as the disposition to respond favorably or unfavorably to reading.[52] Therefore, an attitude toward learning to read in school is to some degree dependent on student response to the objectives and the methodology of the teacher.[53] Some teacher behaviors that support positive student attitudes toward reading are the exhibition of attitudes of enthusiasm and optimism, reading

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to students, and serving as models for appropriate reading behavior.[54]

Positive attitudes are essential when children try to master beginning reading.[55] Morgan and Richardson note that unhappy children are not emotionally able to maintain a sustained interest in a learning task. They cite research which states that brain activity increases when people have joyful feelings.[56] This makes it all the more understandable that teachers can prepare detailed reading lesson plans that include a skillful presentation of cognitive instruction, but those students who have a poor attitude toward themselves, toward learning in general, or toward reading in particular, will not assimilate the material that is presented successfully.[57]

Recent research by Borko and Eisenhart found that good and poor readers' perceptions of reading are related to the differences in their experiences when learning to read. Having established categories for the students' responses to questions as to how they would teach a new student to read, Borko and Eisenhart found that sixty-eight percent of the poor readers focused on procedure, and one hundred percent on behavior. In contrast to this, good readers made seventy-seven percent skill-oriented responses and seventy-six percent holistic [whole language] reading responses.[58] This indicates that the method of instruction impacts on conceptions of reading.

Rasinski and DeFord discuss research which implies that children's conceptions of learning to read in school may be formed by the time they are first graders. They also state that good readers view reading as being concerned with meaning, whereas poor readers think of reading more in terms of decoding, or the process of changing the written symbol into oral

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language.[59]

Buck-Smith reports that many children see reading primarily in terms of a subject they must master in order to obtain an acceptable grade.[60] Lapointe also found that children fail to view reading as an experience with practical meaning, despite having generally favorable attitudes toward reading.[61]

However, Buck-Smith found that when a group of first-grade students was taught lessons about the nature, purpose, and language of reading instruction there was a statistically significant difference in the impact on their attitudes toward reading when compared to a similar group who had not been given this special instruction. This experiment indicates that when a student's understanding of the reading process is not taken for granted, the process of reading becomes better understood, and student attitudes toward reading are affected positively.[62]

In summary, generally favorable attitudes toward reading are found in individuals with high achievement in reading. Additionally, special programs and instruction that take into account the need to inform students about the nature and purpose of language instruction can have a positive effect on student attitudes. The teacher's attitude, behavior, and the classroom climate also may affect student attitudes. Individual attitudes vary, and a number of instructional strategies need to be used by any teacher working with a large group of children.[63]

Assessing attitudes toward reading in young children is difficult. Teale notes that attitudes cannot be measured directly but must be inferred through the behavior of students.[64] For young children, projective instruments that provide a stimulus for them to respond to in relation to

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their needs and dispositions are probably a more natural way for them to reveal their feelings and beliefs. Pictures provide a familiar stimulus for this technique, and through the use of pictures the purpose of the instrument can be disguised in order to eliminate the tendency of children to give answers they perceive to be socially desirable.[65]

A recent survey revealed that teachers perceive that positive student attitudes are important for success in reading. Despite this awareness, the same teachers indicated that they spent little time nurturing positive student attitudes toward reading because of the pressure on them to use classroom time to develop reading skills. Moreover, the teachers assumed that in developing student reading skills, they would be simultaneously improving student attitudes toward reading.[66] This assumption may be partially true. However, research suggests that how much children read and how well they read is influenced by their overall attitude toward reading.[67]

The student/teacher relationship is an important variable in fostering positive reading attitudes. Research reported by Wigfield and Asher indicates that teachers do not have high expectations for black and low-SES children.[68] However, studies assessing the attitudes of black and low-SES children toward reading and school were mixed, which is somewhat surprising since this group, in general, tends to read poorly.[69]

Morgan and Richardson offer additional insight into the student/ teacher relationship. They discuss research which suggests that students are more likely to want to read because of feelings they hold for a teacher rather than because of a specific reading activity.[70] Therefore, the teacher's attitude toward students and learning is powerful and appears to

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be a major factor in promoting interested readers.[71] Morgan and Richardson recommend that if teachers want to impact on general student attitudes they should:

- accept students as they are
- assume students want to learn
- simply expect considerable achievement
- praise whenever appropriate
- be critical in a constructive manner
- be honest with students
- accentuate the positive, i.e., build on strengths
- talk with students, not at students
- have a sense of humor
- learn some interesting characteristics of each student
- trust students and exude warmth
- be enthusiastic[72]

Additionally, Morgan and Richardson recommend that if teachers want to impact on student attitudes toward reading in particular, they should:

- actively listen to student comments and discussions
- make reading fun and rewarding
- make the task in reading clear
- encourage students to read on their own
- make reading assignments shorter for poor readers
- have frequent group and sharing experiences to benefit especially the poor readers
- speak well of reading and share the works you are reading[73]

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In promoting positive student attitudes, therefore, it is important that teachers understand that the attitude they hold for their students is as important as the type of instruction they provide and the context in which instruction is given.[74] Goodman further states that the experiences, attitudes, concepts, and cognitive schemes of a reader are as important as the material being studied.[75]

The research cited previously implies that there is still room for instructional improvement within the reading subject area. It is possible that children become so engrossed in reading procedures that the joy of reading is inadvertently compromised. It follows that attitudes toward reading are not very positive when children find reading more of a task than a means of pleasure. The ideal would be for teachers to help children acquire the skill to read well while simultaneously instilling in them the desire to become lifelong readers.

The Whole Language Approach to Teaching Reading

Early Language Knowledge

Children acquire language from the listening and speaking experiences that occur in a total situation. The foundation for language development, in general, therefore, comes from speech.[76]

Educators differ regarding the language knowledge that children have when entering school. Flesch, a proponent of teaching phonics systematically to beginning readers, cites Seashore's research which proposes that the "average" first-grader's speaking and listening vocabulary consists of about 24,000 words. Because of this rich background Flesch states that teaching reading is reduced to the task of

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teaching children a symbolic language notation system.[77]

At the other end of the continuum, Chall states that from birth until the age of six children understand or speak about 5,000 words.[78] She notes that researchers disagree on this estimate and goes on to say that her review of research studies found this range to vary from 2,000 to 25,000 words.[79] Chall estimates that by sixth-grade, most children have a reading vocabulary of about 6,000 words.[80]

The range of children's speaking and listening vocabularies is an important factor when teaching reading. Urban educators, in particular, need to assess this factor in relation to the population that is being instructed so that the most feasible reading approach can be utilized when teaching their students beginning reading. Among the concerns that this research examines is whether a phonics-based instructional approach best serves the needs/abilities of beginning reading students. Another concern is whether an approach which teaches students how to read using their language knowledge is more feasible. Whole language research will be reviewed in this section of this paper, followed by a review of a phonics-based instructional approach in the next section.

The Whole Language Philosophy

Whole language is a philosophy which infers that children's language learning is facilitated when they are taught language skills in ways similar to how they learn to talk.[81] This philosophy encompasses the instructional strategies teachers employ, the specific materials they use, their classroom atmosphere, and how they view teaching and learning within a language-integrated curriculum. Whole language proponents hold that

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writing, listening, reading, and speaking instruction should evolve from child-centered interests and experiences.[82] They also advocate that children need to be taught language skills in the context of "whole language," and not through isolated skill instruction.[83]

The whole language philosophy is based on research in "linguistics, psycholinguistics, sociology, anthropology, philosophy, child development, curriculum, composition, literary theory, semiotics and other fields of study," according to Newman.[84] More specifically, it has evolved from the linguistics research of Michael Halliday and others, various reading approaches proposed by Kenneth Goodman, and Donald Graves's writing techniques.[85]

In applying the whole language philosophy, whole language teachers encourage and capitalize on children's natural curiosity and language knowledge. Therefore, activities are planned that reflect children's interests. In a sense, children inspire the "teachable moments" within the whole language classroom.

Application of the Whole Language Philosophy

In 1975, the British government issued A Language for Life report through the Bullock Committee. This report resulted in new school language policies in Canada, Australia, and New Zealand, as well as Great Britain.[86] These policies emphasize language learning, which is the focus of these curricula.[87] Currently, the whole language approach to teaching reading and writing is used in England, Canada, New Zealand, Australia, and the United States.[88] Moreover, whole language is the philosophy endorsed for language teaching in Quebec.[89] In New Zealand, whole language

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instruction is the national school policy.[90]

New Zealand introduces reading to beginning readers in kindergarten through language-experience instruction. Teachers use a whole language philosophy to include children's natural language and personal experiences as the material to be recorded and read in language-experience activities. The emphasis on reading instruction throughout the New Zealand school system includes a focus on reading for understanding and does not emphasize phonics instruction, which has not been formally taught for over thirty years.[91] Since 1963 New Zealand has not used a basal reader series, but instead has found reading success through a book experience approach for reading comprehension.[92] That this approach has proven successful is verified by the fact that a study by the International Association for the Evaluation of Educational Achievement found that New Zealand's fourteen- and eighteen-year-olds were ranked the highest in reading comprehension among fifteen countries measured, including the United States.[93] A further study of reading volume by country done by this association revealed that New Zealand's student and adult population does the most leisure reading of the fifteen countries studied.[94] That interest in reading becomes a lifelong pursuit speaks well of the attitude that the New Zealand society holds for reading after formal education. It is not surprising, therefore, that researchers for Becoming a Nation of Readers reported that New Zealand boasts the highest literacy rate in the world.[95]

In the early 1970's, a reading process called Communication Skills Through Authorship (CSTA) was developed jointly by Lewis Smith of the University of Idaho and the Lewiston, Idaho School District. This project was a whole language program in philosophy and a forerunner of what is

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labeled whole language today. The program's premise was that children would learn to read best that which was personally meaningful. Consequently, reading instruction for first and second grade focused on students' tape-recorded stories and writings. This was a complementary program supplementing a synthetic phonics basal program already in use. The students' recordings were collected daily by an aide, who typed them in primary print, and returned the materials for individualized reading instruction. The project produced up to "27,000 taped dictations per year from less than one thousand first and second graders."[96]

The two-year pilot program was funded an additional three years through a federally-funded Title III grant. The spring 1974 results showed 367 first graders earning mean Stanford Achievement scores of "2.19 in word meaning, 2.05 in paragraph meaning, 2.37 in vocabulary, and 2.49 in word study" compared to an expected 1.9 mean score on the test.[97] The 351 second graders achieved "3.22 in word meaning, 3.11 in paragraph meaning, and 3.99 in word study."[98] The expected mean achievement score for this grade was 2.9.[99]

In the United States, whole language instruction remains primarily a teacher's movement, with scattered administrators, teacher educators, and curriculum personnel recognizing and implementing its philosophy.[100] Recently, the whole language philosophy was found to be an appropriate teaching strategy for refugee children by the Bureau for Refugee Programs of the U.S. Department of State, which funds a program to prepare these children for entry into elementary school academic programs.[101] The program, which is administered by the World Relief Corporation, reviewed current child development research and found that the natural

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developmental stages of children's speaking, reading, and writing were best fostered by a "Whole Language Approach and the Natural Approach."[102] In contrast to previous use of traditional second language teaching methods, the Bureau for Refugee Programs' research concluded that the same principles that guide the development of a first language also effectively guide the development of a second language.[103] Whole language instruction, which does not rely on rote memorization nor grammar skill lessons, but rather on learning for meaning within whole contexts, offers a more effective means for second language preparation for refugee children.[104]

Wangberg and Reutten report effective use of a whole language instructional approach to teach illiterate adults to read and write. Their research on the interrelatedness of reading and writing helped them focus on this method as the most appropriate technique to use when teaching illiterate adults. They encourage their students to write about their experiences and interests, and in the editing process focus on teaching them to read what they have written. Knowing their students interests and experiences enables the instructors to match students with appropriate reading material in an individualized manner.[105]

The whole language approach has received the support of an ad hoc group of influential black leaders who are promoting a nontraditional curriculum of language instruction. These leaders endorsed a report which concluded that minority students need better command of the reading, writing, speaking, and listening language skills that are necessary for progress in all subjects.[106] Stating that traditional methods of teaching often have failed to achieve this objective, the report called for an approach to teaching language skills that was more "holistic." This group

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endorsed an experimental curriculum called "Foundations for Learning: Language," which is a whole language instructional approach that had promising results in a number of inner-city schools on the secondary level.[107] Among these schools was a high school in East Cleveland whose students' writing skills were assessed by the Resource Center for Urban Initiatives in Education of Boulder, Colorado to have a twenty-seven percent median improvement in grades 9-12 as compared to a three percent median increase for a control group that received traditional language instruction. Additionally, the center reports that schools in Chicago, Detroit, Inglewood, California, and Washington, D. C. achieved similar results.[108]

Whole Language Instruction

Whole language instruction is more than a teaching philosophy. It is also more than a teaching method. Whole language instruction is a change in teachers' perspective of how they understand and practice the art of teaching. This approach is characterized by how teachers put the whole language philosophy into classroom practice. Additionally, a whole language approach includes teachers implementing instruction in a manner that is supportive of both the individual child and childhood.[109] Teachers who implement the whole language philosophy make a conscious effort to use children's listening, speaking, reading, and writing abilities as tools for learning rather than as objects for learning. Whole language teachers, therefore, supply the philosophical framework for instruction which Barnard and Kendrick think schools often lack.[110] A common thread of whole language classrooms is that instruction is "comprehension-centered

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and child-centered" though individual teaching styles will vary.[111]

Characteristics of the whole language approach include:

- Reading skills are taught in context.
- Reading and writing are thought of as support systems that develop together.
- Subskills are not taught in a hierarchy.
- Phonics instruction is not seen as a separate entity, but as an interaction of three language systems: graphophonic (sound and letter patterns); syntactic (sentence patterns); and semantic (meanings).
- There is reliance is on children's experiences to introduce beginning reading.
- The focus of reading is on meaning, not on language skills. Reading comprehension strategies are stressed and developed in the reading subject area and in relation to language across the curriculum.
- Beginning reading focuses on a child's language knowledge.
- An atmosphere for risk-taking is essential.[112]

The holistic nature of whole language can be seen readily in figure1, which shows how reciprocal and interrelated speaking, listening, reading, and writing are, when using this approach for reading instruction:[113]

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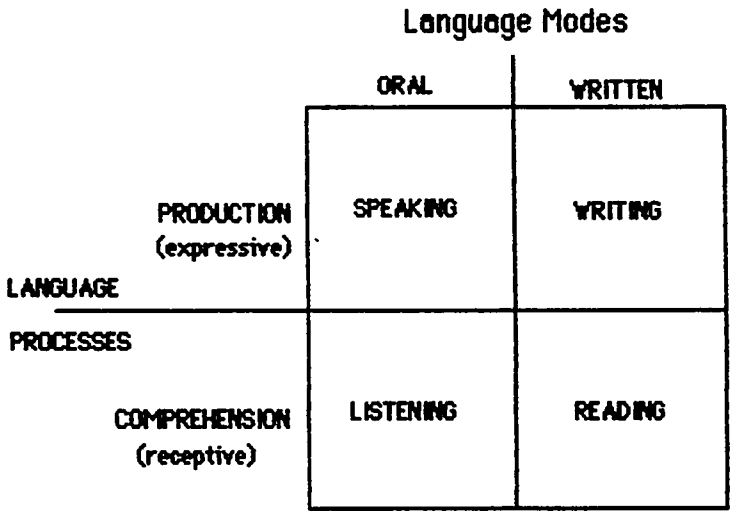

Fig. 1. Baumann's model of the four basic language processes demonstrates that language occurs in one of two modes (oral or written) and consists of one of two different processes (production or comprehension), each of which complement one another. Just as the development of oral language abilities (speaking/listening) are mutually reinforcing, so too the acquisition of reading and writing abilities go hand-in-hand. Given the strong relationship among and between the four language processes, instruction in one mode or process enhances the learning of another mode or process.[114]

Another model of whole language is offered by Harst and Burke in figure 2 below:[115]

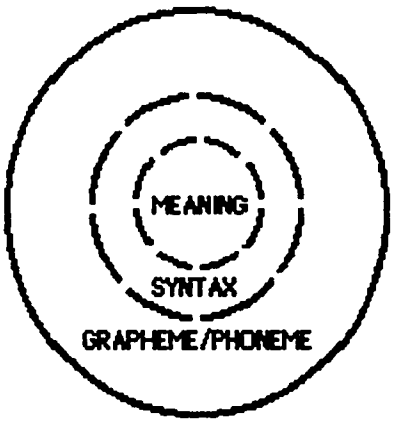

Fig. 2. Harste and Burke's Whole Language Model

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In this model, Harste and Burke represent whole language as a sphere with meaning at the core, surrounded by a syntactic/language component, which, in turn, is surrounded by the letter/sound symbols of language, also known as the grapheme/phoneme components of language. This model illustrates effectively how the language systems work in an interdependent and interactive process. It also graphically displays the missing ingredient children must master when reading: the grapheme/letter component which signifies the difference in spoken and written language.[116] Children enter school having mastered all but this final component of language successfully. Language learning programs, such as whole language, which Botel notes are based on the whole to part learning principle of Gibson and Levin, exemplify this language model.[117] This principle states that

> when teaching a complex task it is preferable to start training on the task itself, or a close approximation to it rather than giving training on each component skill independently, and then integrating them.[118]

In whole language instruction, learning goes from general to specific, and from familiar to unfamiliar.[119] Instruction begins with children's natural language and includes early writing and reading activities that are centered on the child's experiences and interests.[120] Whole language instruction teaches children the basic skills of beginning reading within the context of whole language and not through isolated words or phrases.[121] Thus, the whole language approach to teaching beginning reading is the process of teaching children to read using language in its entirety. This approach, therefore, permits the teaching of beginning reading to shift toward child-centered activities that use children's natural language instead of activities that are dominated by the teacher.[122]

Kintisch notes that another benefit of using children's language to

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teach beginning reading is the internal motivation of the reader to remember what he/she has written or dictated so that it can be reread. This reading practice stimulates auditory and visual memory while enhancing the reading comprehension of the writer/author.[123]

Primary reading materials used in whole language programs include the writing of the individual child and classmates, trade books which are more widely known as library books, magazine and newspaper articles, Big Books which publishers are producing in response to the whole language movement, poems, and advertisements and posters.[124] These materials permit children to read language the way it is used in contrast to the artificial language often found in publisher's basal readers.[125] It is not surprising that children are motivated to learn to read through using these materials, for children come to school with an awareness of environmental print that may have started as early as age two.[126] Newman endorses encouraging children to experiment with language and sees this experimentation as a welcomed change. She states that too often classroom instruction has been equated with children being expected to read and write precisely as they were instructed.[127]

The whole language approach, as has been indicated, includes use of the language-experience approach to teach beginning reading. Sentences and stories are dictated to the teacher, who prints them and has the child read the printed language aloud. It is important that teachers record students' stories in their original language and not as they would like them to be.[128] Thus, enabling children to see and to read their natural language in printed form. For children, the language-experience approach demonstrates effectively the connection between reading and writing and

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reinforces their interrelated purposes.[129]

Goodman notes that to use a child's dictated language to teach beginning reading, the child's natural language must be used verbatim. Using the child's natural language means that the teacher should not change verb tense, noun/verb agreement, substitute standard English for a spoken dialect, or take any liberties with a child's natural language when teaching beginning reading. Goodman feels that some users of the language-experience approach misunderstand how language learning works when, with the best of intentions, they make vocabulary substitutions and modify language structures while recording children's spoken language. Beginning readers rely on their knowledge of the grammar of language as well as their experiences; therefore, their control over grammar, as they perceive it, is necessary in making an effective transition into beginning reading.[130] Furthermore, a fundamental concern of children is that their language make sense to others.[131]

To facilitate the transition of beginning readers, whole language teachers use temporary, flexible grouping for instruction based on student interests and skill level.[132] Within the temporary, heterogeneous grouping of students, it is customary to find students working together in "cooperative peer learning groups."[133] Cooperative learning provides students with an informal opportunity to be peer tutors and often results in slower developing students achieving beyond a teacher's expectations.[134]

Whole Language and Phonics Instruction

Whole language teachers, in general, are not proponents of intense phonics instruction. The whole language method involves neither isolated

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pre-reading skills instruction, nor reading readiness preparation in the traditional sense, for learning progresses from a child's natural language to the individual parts of the language process.[135] Richgels notes that early phonics instruction probably has received a poor reception because it has been introduced to children before they are developmentally ready to assimilate this language knowledge and use it meaningfully. Furthermore, he states that phonics instruction should be carried out in context and not in isolation, so its purpose is evident to the learner.[136]

Botel and Seaver propose that phonics instruction can be accomplished easily and meaningfully by whole language teachers who include this instruction within "real language contexts."[137] Smith's Success in Kindergarten Reading and Writing: The Readiness Concept of the Future offers some field-tested strategies for implementing this technique.[138] Learning subskills within a "whole context" is a meaningful activity to which children can relate.[139] However, Barnard and Kendrick suggest that specific subskill instruction should be for a limited time and in relation to a need within a total situation.[140]

Rynders suggests that one reason teaching systematic phonics is difficult may be because of the complexities of the English language.[141] Carbo addresses the phonics issue and the complexities of language learning with an overall understanding of children and learning. She sees children as falling into one of three groups in relation to phonics instruction: the first group is comprised of children who "need" phonics to become good readers. These individuals are "auditory/analytic" learners who have the ability to learn phonics well. The second group she classifies as children who "do not need" phonics instruction to become good readers.

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This group also has the ability to learn phonics but does not need this instruction because they are outstanding "visual/global" learners who quickly develop a sight vocabulary. The third group of children are "unable" to master phonics. This group is not "auditory and analytic." They cannot discriminate among sounds or recall the sound/s of specific letter/s. These children need to be instructed through their reading strengths.[142] In opposition to this view of phonics instruction for individuals based on their learning strengths/abilities are phonics' proponents like Flesch and Groff who advocate systematic phonics instruction for beginning readers in general.[143]

Troubled Readers and Whole Language

Teachers of troubled readers report that whole language is a powerful and effective tool to use when teaching their students reading and writing.[144] The unexpected result has been a positive change in student attitudes toward reading.[145] Whole language permits ineffective readers to build on their language strengths through their writing and grow into readers who come to trust their ability and venture into reading with renewed self-confidence, according to Goodman. He holds that troubled readers often have been drilled too intensely on isolated skills. This procedure results in troubled readers losing confidence in their ability to read and becoming dependent on their teachers.[146] Goodman sees the "technology of reading instruction" leaning on tests, texts, and skill exercises to the extent that reading assessment over-emphasizes skill instruction.[147]

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Whole Language and Assessment

Whole language instruction is evaluated most adequately with methods that use comprehensive assessment. Standardized testing is the traditional method used by most school systems in the United States. For young children, in particular, Teale states that this singular method is not sufficient, as formal testing is restrictive regarding performance and has a narrow range of acceptable responses.[148] More specifically, Teale notes that formal testing of the early stages of the reading and writing process of young children is not an adequate conceptualization of instruction and is not congruent with the learning process of this age child.[149] This consideration is especially serious with beginning reading instruction moving into kindergarten and some preschool curricula.[150]

As was mentioned earlier, Durkin's research on "Testing in the Kindergarten" found that assessment is influencing instruction today.[151] Teale's discussion of assessing young children notes that on a continuum testing varies from tests for specific responses to observational methods which are relatively open and unintrusive. At the midpoint in this continuum is performance sampling, which includes recording task behaviors and focusing on specific problems. Teale favors performance sampling combined with observation as methods to assess young children, as he notes this procedure is a more comprehensive means of assessment at this age. In contrast, he indicates that formal testing gives a "one-shot" view of children's general knowledge.[152]

Newman's perspective of whole language instruction supports Teale's views. She notes that whole language is useful because it offers teachers a perspective which allows them to observe students and thereby gives

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them criteria for evaluating learner performance.[153]

Goodman also supports "kidwatching" as a means of evaluating young children.[154] He states that teachers know the overall progress of children in a more meaningful way through observation than by formal testing.[155] In a telephone interview with this researcher, Goodman stated that a better assessment of student progress in the areas of reading and writing was obtained by teachers knowing the amount and quality of reading and writing that children were doing, rather than scores of test subskills. He also stated that measures of the affective domain were important in that they offered a different perspective of students than is found on standardized cognitive ability tests.[156]

Correspondence with the Minister of Education of New Zealand regarding whole language evaluation notes that:

> Because standardized tests tend to focus on isolated skills and words which are inappropriate for monitoring whole language development, New Zealand teachers use instead informal methods to evaluate children's progress. Teachers monitor and plan programmes for their pupils based on sensitive observation of their behaviour. A clear picture of what a child can do is essential. . . . Careful monitoring of children's oral and written language development is regularly done with the children and involves records of teacher/pupil conferences, writing portfolios, group discussions, running records and a variety of diagnostic procedures.[157]

Summary

Inasmuch as the state of reading and reading assessment is receiving much publicity in the United States today, it is reasonable to propose that educators in the United States should reassess the materials and methods they are using to accomplish these assessments. Some positive features of

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whole language that would seem to recommend it as a method to teach reading to kindergarten students are the flexibility in choice of materials, the possibility for virtually unlimited variety in vocabulary studied, and the relatively low cost of implementation. Moreover, whole language is not without some prominent successes, as New Zealand's high literacy rate attests.[158]

The Writing to Read Approach to Teaching Reading

The Microcomputer and Education

Modern technology has made microcomputers available to educators. In the 1960's and 1970's microcomputers were used extensively for the first time in the United States to teach elementary students reading and writing skills.[159] During this period, microcomputers were used mainly by curriculum developers for rote instruction. Balajthy suggests that microcomputers did not gain wide acceptance at this time because these early programs did not base their instruction solidly on language development theory.[160]

The uses of microcomputers in the classroom today are more varied. Basically, teachers use microcomputers in one of two ways. The most fundamental use is to perpetuate the old, as Heffron suggests, by using the microcomputer for basic subskill drill and practice. Another use of the microcomputer is as a creative tool in reading and writing by making it an integral component of the literacy process for language arts instruction.[161]

Before using microcomputers for skill instruction, Scott and Barker advise teachers to study the software to ensure that it was developed with "sound pedagogical assumptions" and that it provides more than could be

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accomplished in a paper and pencil assignment.[162] Scott and Barker review recent software designed to reinforce classroom skill instruction and recommend courseware for sight vocabulary that teaches new words "in meaningful contexts." Though they acknowledge that there are times for isolated drill practice, they favor developing vocabulary within relevant contexts.[163] Included in the software they review is courseware for critical thinking and problem solving activities as well as material for comprehension skill practice, including IBM's Writing to Read program.[164]

Some microcomputer software programs are more of the same, namely "expensive dittos on a screen."[165] From the brief software descriptions given by Scott and Barker's review, it does not appear that all of the software discussed is based on present pedagogical assumptions in reading instruction. Balajthy notes that in the field of reading, instruction has been moving away from "linear subskill models" and toward "psycholinguistic and interactive" models which take into consideration readers' experiences and previous knowledge in relation to text comprehension.[166] This transition period also includes a renewed emphasis on learning reading and writing through a "holistic process."[167] Balajthy maintains that software which provides subskill drill and practice runs counter to recent changes in educational theories.[168]

Expanding on the use of the microcomputer as a tool for reading and writing, Dudley-Marling notes that students are more likely to become "fluent readers" when the microcomputer's use requires students to be able to read in order to use its programs.[169] This use motivates students to apply their reading abilities and invites using texts written for the purpose of fostering reading comprehension. Four software programs are reviewed

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by Dudley-Marling which are interactive and comprehension-application tools.

Another dimension of the comprehension use of microcomputers is for teachers to use software programs that enable them to write their own interactive reading material. The Apple Superpilot program is recommended by Dudley-Marling for this use.[170]

High quality interaction between the microcomputer and user can be achieved, according to Searfoss and Readence, if children are exposed to microcomputer programs that offer them the opportunity to interact with ideas and concepts rather than responses to software material that elicits right or wrong answers.[171] They suggest integrating microcomputers into classroom instruction to further reading and high level thinking skills after a good reading program has been developed. They do not recommend including microcomputers for instruction as a means of improving an already existing poor reading program.[172]

The Writing to Read Philosophy

Learning to read through writing is not a new idea. Nearly two decades ago Carol Chomsky suggested that children should be instructed in beginning reading "through the process of learning to write."[173] Concurrent with Chomsky's suggestion was a major research study by Read which demonstrated children's ability to apply their English phonology knowledge to spelling.[174] During this same period Wheeler's research revealed that kindergarteners could teach themselves to write, self-correct, and improve their writing.[175] Hall's study of three, four, and five-year-olds found that children have an interest in writing prior to reading. These children's

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parents were professionals who made materials available that would foster writing and reading interests.[176] Recalling that the listening and speaking vocabularies of the average six-year-old ranges from an estimated 2,000 to 25,000 words, it is not surprising that children have a rich knowledge base to call on for writing.[177] Furthermore, because of their egocentric natures, expressing themselves in writing reaffirms the sense of power that young children have in relation to the world as they perceive it.[178]

Martin recognized the symbiotic relationship of writing and reading, noting that each process reinforces the other and both processes are stronger when they are used together rather than alone. The premise of the Writing to Read program he authored is founded on the philosophy that children learn to read easier when introduced to this process through their own writing.[179] Martin developed materials to accomplish this objective, and persuaded International Business Machines Corporation (IBM) to provide the necessary equipment for experimenting with this concept.[180]

For beginning writing instruction, Martin felt that children should learn the forty-two basic sounds (phonemes) that represent the approximately five hundred ways sound is found in print in standard English.[181] This technique enables children to write phonetically what they say and hear. After instruction in the Writing to Read laboratory, children acquire confidence in their phonetic spelling and are encouraged to write words as they hear them when first composing sentences. Reading their compositions and those of peers is where the transition from learning to write extends to the process of learning to read. It is Martin's philosophy that children will feel less inhibited in learning the irregularities of the

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English language with a phonetic system as a base. He states that rather than feeling puzzled or at a loss when faced with language irregularities, children will recognize that some phonetic spelling is unusual and will assimilate and apply spelling differences.[182]

An Overview of Writing to Read

Writing to Read began as an experimental program which Martin used at the demonstration school at The Nova University in Stuart, Florida in the late 1970's.[183] By the fall of 1982, Martin had persuaded IBM to field test the program with 10,000 kindergarten and first-grade students in 22 school districts and private schools, representing nine states and the District of Columbia.[184] IBM engaged the Educational Testing Service (ETS) in Princeton, New Jersey to evaluate this project over a two-year period. ETS conducted a formative evaluation of the program for 1982-83 and a summative evaluation during 1983-84.[185] The reading of a general ETS letter about this evaluation suggests that the impact on children using the program was "positive" and "significant" in relation to writing skills in kindergarten and first grade, and "positive" and "significant" in relation to reading in kindergarten but not in first grade. A statistically significant difference was not mentioned.[186]

In Martin's experiments with the Writing to Read system, he compared the metropolitan standardized achievement test results of three groups of children. One diversified group of socioeconomic students used the writing program and no basal reader daily (group one); a control group had only the basal reader with intense teacher instruction daily (group two); and a third group had thirty minutes of the writing program plus 180 minutes of a

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basal reader program daily (group three). The results of the metropolitan standardized achievement tests showed that students in group one scored at the 92nd percentile; the second group scored slightly above the 50th percentile; and the third group scored at the 80th percentile.[187] It appears that educators using the methods of group one or group three would be able to improve student group scores on standardized tests. The Writing to Read school which will serve as one of the groups in this study uses an instructional situation similar to group three in Martin's experiments. The school introduces kindergarten children to the Writing to Read laboratory in January. Students spend forty-five minutes daily attending this laboratory until June, and teachers have laboratory follow-up in the regular classroom as is needed for individual students. The curriculum also includes daily instruction in the basal reader series.

Partridge reviewed the Writing to Read program and noted similarities between it and the earlier Initial Teaching Alphabet (ITA) system. The ITA system uses forty-four characters to represent the forty phonemes found in the English language. These forty phonemes are found in print in about 2,000 ways. Partridge expressed the concern that this system did not enjoy much success. She noted that ITA research revealed that though users of this system wrote more freely initially, the results did not translate into greater long-range gains, and by the intermediate grades the earlier gains had diminished.[188]

When interviewed about the similarity of Writing to Read and ITA, Martin noted that though similar, the two are different in two ways. The first difference, he notes, is that Writing to Read begins with an emphasis on writing and not reading. The other difference, Martin states, is that

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Writing to Read uses a phonetic alphabet that is a simplified version of the pronunciation key found in dictionaries.[189]

The Writing to Read System

The Writing to Read system was designed to precede formal instruction in reading.[190] Used as a preliminary instructional tool, Writing to Read supplements reading readiness instruction.[191] The Writing to Read program uses exercises organized into ten learning cycles. At a computer station a voice-equipped IBM PCjr introduces students to forty-two phonemes (consonants, vowels, consonant and vowel digraphs) in carefully structured lessons. Each lesson teaches the beginning, middle, and ending sounds of three vocabulary words. By the end of the ten cycles, thirty vocabulary words have been introduced for the mastery of the forty-two phonemes. Follow-up exercises for these lessons are done at the work journal station where the students practice writing words containing the phonemes they have learned in a workbook. This practice reinforces the phonemic instruction introduced at the computer station. At the writing/typing station students experiment with writing sentences and then use word processors to transfer their writing into book-like print. The listening library station gives students the opportunity to listen to recorded stories and to follow them in books. A make words station is provided so students can manipulate letters to form new words. Students attend a forty-five minute Writing to Read laboratory session daily. Classroom follow-up of laboratory activities is provided by the teacher. After several weeks of experience with the Writing to Read materials, most students have learned to work at each of the various laboratory stations, which they do on a daily basis. Characteristics of the Writing to

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Read Approach include:

- Phonemes are the basic reading skill taught in this program.
- As an aid to instruction, Writing to Read emphasizes writing initially, then reading.
- Phonemes are introduced in a set hierarchy.
- Phonic instruction is introduced with computer software and reinforced in a correlated workbook.
- The ten cycles of the Writing to Read program consist of thirty words which are introduced in isolation.
- Reading is supplemented through the teaching of traditional readiness skills.
- Children are encouraged to use their language knowledge for early writing and then to read what they have written.
- An atmosphere for risk-taking is present. Students are encouraged to use phonemic spelling to experiment with writing.[192]

Writing to Read Programs

The Portland Public Schools piloted the Writing to Read system in fourteen elementary and Early Childhood Education Centers during the 1983-84 school year.[193] This field test included approximately 1,500 students.[194] Portland's evaluation report is an important one not only because of the number of students involved in the study, but also because the findings and feedback of the Portland administrators, teachers, students, and parents represent a large urban sample for ETS's national field study of the Writing to Read system.[195]

Wallace studied Portland's experiment with Writing to Read and

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visited five of the fourteen schools using the system. He talked to administrators who were implementing and monitoring the system and also with researchers who were evaluating it. On visiting a Writing to Read laboratory in late spring, he reported that all students were busily engaged at the various Writing to Read stations and seemed to be interested in and comfortable with their tasks. It seems worthwhile to note that when describing this Writing to Read laboratory setting, Wallace mentioned the presence of a teacher, an aide, a Writing to Read coordinator, and a parent volunteer assisting students.[196] This low student-adult ratio is not the norm for the traditional classroom setting.

Portland's school personnel expressed enthusiasm and caution regarding their Writing to Read experiment. District curriculum administrators and school building coordinators of the Writing to Read program noted that students in the program felt motivated to write and seemed to feel that they were in control of what they were learning. It was observed also by some of the school personnel that Writing to Read is an excellent remedial program to reinforce learning phonics for students having difficulty in this area. From a conservative viewpoint, the school personnel recognized too the need to be objective regarding possible defects in this program. Areas of concern included too much repetition for some students, workbook deficiencies, the objections of some students to the unusually slow pace of tapes in the listening station, a need for better integration of writing and reading instruction, and more emphasis on comprehension. These were concerns that the administrators and coordinators felt could be addressed either by the program developers or by personnel within their school district. In summary, the Portland school

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system sees the program as helpful and plans to continue working with it. However, the administration remains cautious due to an in-house evaluation which found recent efforts to use other computer-assisted instruction in their elementary schools to be an overall failure.[197]

As mentioned earlier, Portland's evaluation of Writing to Read supplemented the Educational Testing Service's (ETS) study of this program. However, only fifteen of Portland's sixty-four participating classes were included in the ETS sample. Furthermore, Portland's researchers indicated that their study may not have had results as positive as ETS's and warned against a possible bias in the ETS evaluation driven by the market.[198] It is not possible to study the Portland results as Portland did not include specific program test results in their evaluation report.

The Portland school evaluators speculated that Writing to Read may encourage teachers to experiment more with a language-experience approach when teaching reading and writing. Wallace discussed the possibility that another approach might be as effective or better and less expensive. Personnel, time, and materials for the Writing to Read program are relatively expensive, he noted.[199] A large initial investment must be made in purchasing computers, software materials, and other laboratory instructional materials. As software materials are updated, more capital outlay is necessary.

Additional school systems have expressed interest in the Writing to Read program. By the 1985-86 school year, IBM reported use of the program by 125,000 children throughout the United States.[200] Included in these figures are 1,612 kindergarten students in Tulsa, Oklahoma, who were introduced to Writing to Read during the 1984-85 school year.[201] The

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Writing to Read system was implemented as part of Tulsa'a revised kindergarten curriculum, a move prompted in response to pressure from a group of affluent parents in the school district for a more challenging kindergarten program. The Tulsa school system's proposed early childhood instructional changes were questioned by a group of community early childhood traditional developmentalists who opposed introducing reading and writing to kindergarten children.[202] The media coverage which followed is perhaps why the Tulsa School System evaluated its program so extensively.

The Tulsa evaluation is represented through Metropolitan Pre-Reading Readiness Test (MRT) stanine scores. MRT stanine scores range from 1-9. More specifically, low scores range between stanines 1-3; middle scores between stanines 4-6; and high scores range between stanines 7-9. Tulsa included in its report district-wide MRT scores; MRT scores for "not ready" children; MRT scores for Chapter 1 children; and MRT scores for developmentally young children. The broad categories give an overview of the effects of Writing to Read on several population subgroups. It is important to note that Tulsa's results represent both Writing to Read students and students who did not have the program and, therefore, become a control group within the same school district.

In summary, at the end of the 1984-85 school year, Tulsa found that Writing to Read students improved 7.3 percent in high MRT stanine scores and had a decline of 6.7 percent in low MRT stanine scores when compared to kindergarten counterparts who did not have Writing to Read the previous school year. In contrast, the control group showed a 0.3 percent loss in high MRT stanine scores and a 1.5 percent decline in low MRT stanine

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scores in 1985.[203]

A look at the results for "not ready" children, defined as children who score below the 40th percentile on the MRT at the end of the school year and attend a developmental first-grade class instead of a traditional first-grade class, revealed the following: in the Writing to Read group, the "not ready" children scoring below the 40th percentile on the MRT dropped from 40.6 percent in 1984 to 28.8 percent in 1985, which represented 170 children being promoted to a traditional first-grade class. The control group had a 1.7 percent decline, which represented 20 children.[204]

There also was a decline in the number of Chapter 1 children (children attending school from lower socioeconomic areas) with MRT scores below the 40th percentile. The Writing to Read group had a 17.4 percent decrease for "not ready" children, which represented a decrease from 54.0 percent in 1984 to 36.6 percent in 1985, or, 125 children now scoring above the 40th percentile on the MRT. The control group had a 2.3 percent decrease, which represented 39 children improving their MRT scores.[205]

The most surprising MRT results are the differences in the scores of the developmentally young children. These are children who have a developmental age of 4.0 years or less, or 4.5 years on the Gesell Kindergarten Screening Test of maturity, in contrast to a developmental age of 5.0 years or above which suggests "a child's readiness to experience success in kindergarten."[206] These children were studied in relation to the percent of children who scored above the 40th percentile on the MRT in the two developmentally young age groups: 4.0 years or less and 4.5 years. The difference between the scores of Writing to Read students and students with traditional instruction was 27.9 percent for children whose

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developmental age was four years or less, and 29.3 percent for children who had a developmental age to four years and a half. The Gesell and MRT scores were paired and subjected to a correlational test that found a relationship between the scores that was significant at the .001 level of confidence.[207]

Research results of Writing to Read are starting to surface from educators that were not included in the Writing to Read field studies. K. Ollila studied the impact of Writing to Read on the developmental writing skills of two classes of first-grade children. She used syntactic and holistic measures to evaluate the writing samples. She did not find significant differences between the holistic ratings of Writing to Read and non-Writing to Read students, which was in conflict with the earlier ETS findings of holistic writing.[208] It must be noted that her sample size was considerably smaller than the ETS sample. However, she did find a significant difference between the Writing to Read and non-Writing to Read groups "on six of eight syntactic measures of amount and complexity of sentence structure." Thus, she concluded that Writing to Read improved the quality and quantity of writing of the first-grade students studied.[209]

Another study of the impact of Writing to Read on the reading and writing abilities of first-grade students found no significant difference between the reading achievement of Writing to Read and non-Writing to Read students.[210] This study supports the earlier findings of ETS; however, it found significant differences in writing achievement which favored the Writing to Read students. Additionally, the attitudes of parents, students, and teachers regarding the Writing to Read system were assessed and discussed. In summary, parents and students maintained enthusiasm for

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the Writing to Read program, and the parents indicated that they felt the computer was the system's most valuable component. On the other hand, teachers expressed a preference for the program's writing station, and criticized the listening station, the make words station, and the synthesized speech used for the computer drill. Additionally, the teachers felt the software was too repetitious and that the system, in general, was too rigid.[211]

Spillman evaluated the written language production of 569 pupils in six schools using either traditional kindergarten and first-grade instruction or the Writing to Read system as a writing stimulus. Materials gathered over a two week period indicated that the Writing to Read students produced twice as many communication units as students in the traditional class. They also spelled more words correctly.[212]

The District of Columbia Public Schools evaluated the results of 2,813 kindergarten and first-grade children who were introduced to the Writing to Read system during the 1985-86 school year.[213] Among the findings, are the following results:

- Students' scores showed a statistically significant increase over the scores of comparison groups on the reading and language subtests of the Metropolitan Achievement Test.

- Although first-grade students' scores were significantly higher than those of the comparison group, they were not as high as might be expected given the kindergarteners' achievement level.

- The mean scores of students in the program were at higher levels than those of the comparison groups.[214]

Research reported in 1984 by the Frank Porter Graham Child Development Center, University of North Carolina in Chapel Hill, indicated

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that students had difficulty reading words that they had not learned as part of the Writing to Read system's instruction. It was concluded that their instructional program should include supplementary materials to help students apply the Writing to Read phonic instruction.[215]

Writing to Read appeals to school districts looking for effective ways to introduce basic writing and reading instruction to students with varied abilities. Norfolk Public Schools joined the ranks of those implementing this new technological advance in instruction. During the 1986-87 school year, one of its elementary schools piloted the Writing to Read system. The results led to the program being implemented in eleven additional low socioeconomic "target" schools the following year. The school that did the pilot study for Norfolk Public Schools is one of those this researcher studied. That research will be discussed in the following chapters.

Writing to Read: An Integrated Approach

Recent language-acquisition research and theory hold that it is crucial to integrate reading and writing instruction.[216] Mehan and others state that microcomputers are used most effectively when they are part of a total language arts program.[217] The Writing to Read system uses microcomputer software as a tool to teach beginning writing and reading in an integrated manner. As stated earlier, Writing to Read students are encouraged to use phonetic spelling to write their own sentences after phonemic instruction at the computer station. This practice is a modified use of the language-experience approach which students in the Writing to Read laboratory initiate. This strategy encourages students to investigate and to use both their writing and reading abilities. The encouragement to

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take risks and write creatively is very similar to whole language instruction which supports student use of invented spelling.

Parents and some teachers question the notion of letting children write using their own spelling. Carol Chomsky, however, was an early advocate of letting children write the best they could as soon as they had command of beginning sounds. She felt that this strategy was an effective way to stimulate curiosity in beginning reading for young children in that it let them be active participants in their learning.[218]

Partridge reports that those who have investigated children's spelling have found that there are four sequential strategies which most children use. These strategies include pre-phonetic, phonetic, transitional, and correct spelling. Children who are encouraged to write creatively without standard spelling being emphasized eventually will learn, therefore, to recognize non-standard spelling and become correct spellers.[219] Partridge does not suggest, however, that this total transition will be seen during the kindergarten year.

The goal of the Writing to Read program is to improve students' reading achievement and writing ability. Therefore, it is important to recognize that in the laboratory situation children are not limited to the use of a controlled vocabulary in achieving this goal, although a controlled vocabulary of thirty words is used to introduce and to master the forty-two phonemes in this program. The use of an unlimited vocabulary for independent writing encourages children to rely on and to use the rich language knowledge they have when entering school.

Ehri and Wilce's research on the effect of phonetic spelling instruction on beginning reading supports using this spelling to assist

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beginning writing and reading. They attribute the reading success of phonetic spellers to be the ability to be better phonetic cue readers, which is the ability to remember associations "between letters in spellings and sounds in pronunciations."[220]

Some Writing to Read laboratories use word processors instead of typewriters at the writing station. Dudley-Marling reports that there is some evidence that children write longer language-experience stories and make more revisions when they use word processors.[221] Additionally, use of the word processor encourages pupils to assimilate and to review new language concepts that have been introduced.[222] Word processors also motivate children to experiment more with language when they are allowed to work together in pairs.[223] As in the classroom, the teacher is the ultimate source for creating and maintaining an atmosphere of risk-taking and exploration in the Writing to Read laboratory.

Student Attitudes and Writing to Read

An ETS parent questionnaire revealed that seventy-seven percent of parents surveyed felt that their child liked the Writing to Read program "very much."[224] More specifically, Butzin, a Writing to Read teacher, reports that the Writing to Read program encouraged initiative and gave her children confidence.[225]

The Tulsa Public Schools had the University of Tulsa administer a questionnaire to parents who had participated in the Writing to Read program. One part of the questionnaire addressed children's attitudes toward school before and after using the Writing to Read program as part of their kindergarten instruction. Parents reported that their children's

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attitudes toward school were more positive after using the Writing to Read program.[226] The parents also expressed their own views about their children's kindergarten experiences. Their assessment of the Writing to Read program was "overwhelmingly" positive.[227]

Collis, Ollila, and Muir conducted a joint study, referred to earlier, which also found parent and student reaction to Writing to Read to be positive. In contrast, they report teacher reservations concerning the program's repetition and their concerns regarding the lack of allowances for individual student differences. Additionally, the teachers felt the program was too rigid, though they liked its daily emphasis on writing.[228]

In the Washington, D.C. area, two catholic schools were among the initial 100 schools that field tested the Writing to Read program. These schools did not report specific student reading or writing gains from using the program, but did state that parents, students, administrators, and teachers were enthusiastic about the system, and that it was observed that their students gained confidence through using the program.[229]

These general attitudinal results are not surprising. Searfoss and Readence note that children have few "preconceived negative thoughts about the computer."[230] Rather they state that the simple graphic language of computer programs is enticing to the inquiring mind of young children.[231]

In chapter four, the research findings of this study will be discussed and the attitudes of Writing to Read students in relation to students using the whole language approach for beginning reading instruction will be examined. Both of these approaches introduce beginning reading and writing in kindergarten.

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Writing to Read and the Young Child

Writing to Read is reported to be one of the first microcomputer-based programs that offers an integrated approach for instructing young children.[232] It is important that educators note that research reports the finding that microcomputers have their highest impact when teaching the young child. This impact is said to "decrease steadily as grade level increases."[233] Of equal importance is the fact that secondary schools have more computers available for instruction than elementary schools.[234]

The important influence of the microcomputer on the learning of young children necessitates that instruction be monitored to ensure that language development is not compromised by an imbalanced use of microcomputer programs.[235] Therefore, it has been recommended that the Writing to Read system is not an appropriate mode of instruction for some young children.[236] For slow developing students, it has been recommended that some program modifications are needed.[237] On the other end of the continuum, it has been recommended that other modifications are needed for students who are ready for more advanced work and do not need the skill instruction provided by the Writing to Read program.[238]

The earlier reports of Tulsa's unexpected success in using the Writing to Read system with developmentally young children indicates that some young children can successfully master the Writing to Read program. Therefore, instructing young children with this system requires careful assessment to ascertain those learners who would benefit from this instruction.

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Summary

In general, available research indicates that students write and read with greater ease after Writing to Read instruction. Parents of children using the program express enthusiasm and support of the Writing to Read system. Teachers observe that students are confident users of the program. Some teachers and school systems express caution about various components of the program. It is anticipated that software competition, in general, will assure that IBM remains sensitive to educators' input regarding modifications that might be made to the Writing to Read software.

Microcomputer technology is advancing rapidly and software is being updated continually. Therefore, it is reasonable to predict that new instructional strategies, such as Writing to Read, are the beginning of a new trend in the methodology of teaching young children to read and write.

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CHAPTER 3

METHODOLOGY

This chapter is divided into two sections: Research Questions and Hypotheses and Research Design and Procedures. Discussion of the population, research design, data gathering procedures, and instruments used for assessing kindergarten students using the whole language and Writing to Read approaches for beginning reading instruction are included in the research design section of this chapter.

Research Questions and Hypotheses

Research questions and specific hypotheses which this study addresses are as follows:

1. Is there a significant difference in oral reading performance between kindergarten students in the whole language and Writing to Read beginning reading programs as measured by individually reading aloud a text-referenced reading passage?

Hypothesis one: There is no significant difference in the oral reading performance of students in the whole language or Writing to Read beginning reading programs at the end of kindergarten.

Hypothesis two: There is no significant difference in the oral reading performance of males and females at the end of kindergarten.

Hypothesis three: There is no significant difference in the oral

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reading performance of students based on socioeconomic status at the end of kindergarten.

2. Is there a significant difference in attitude toward reading between kindergarten students in the whole language and Writing to Read beginning reading programs as measured by an individually-administered semantic differential instrument which measures the attitude factors of a specific concept pertaining to reading?

Hypothesis four: There is no significant difference in the attitudes of students toward reading in the whole language or Writing to Read beginning reading programs at the end of kindergarten.

Hypothesis five: There is no significant difference in the attitudes of males and females toward reading at the end of kindergarten.

Hypotheses six: There is no significant difference in the attitudes of students toward reading based on socioeconomic status at the end of kindergarten.

3. Do kindergarten students who exhibit different attitudes toward learning to read show a significant difference in oral reading performance as measured by individually reading aloud a text-referenced reading passage?

Hypothesis seven: There is no significant difference in the oral reading performance of students exhibiting different attitudes toward learning beginning reading at the end of kindergarten.

The research findings based on these hypotheses are discussed in chapters four and five.

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Research Design and Procedures

The research population totaled 128 kindergarten students from two elementary schools within the same urban school system. Both schools serve a varied population of children from low and middle income parents. Student lunch status, as described by the following data, was used as a socioeconomic status (SES) indicator:

Table 1.--SES Profile by Schools

	Full-Price Lunch	Reduced Lunch	Free Lunch
Whole Language School (N=61)	39 (63.9%)	7 (11.5%)	15 (24.6%)
Writing to Read School (N=67)	23 (34.3%)	5 (7.5%)	39 (58.2%)

Data on student oral reading ability and attitudes toward learning to read in school were compared for both schools using evaluators for whom interrater reliability was established. A semantic differential was administered to students to measure attitude toward learning to read in school after the end-of-the-year Metropolitan Readiness Test (MRT) was completed. The MRT assessment was given from May 4 to May 22. This time frame permitted one-on-one evaluation within a schedule that was amenable to the teachers and principals at participating schools.

The students also were given text-referenced passages from the

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Brigance Diagnostic Inventory of Early Development (IED) to read, to identify those students who could apply the beginning reading skills learned during the kindergarten school year.[1] Additionally, the results of the Metropolitan Readiness Test were analyzed to see the relative distribution of reading readiness in relation to oral reading performance and student attitudes toward reading. As noted earlier, the two approaches studied were the whole language approach and the Writing to Read approach.

In the whole language approach, teachers use the language knowledge of children to teach beginning reading to individual children and the whole group. Language skills are taught within the context of sentences and stories volunteered by the students. Students are grouped for individual activities as the skills for working independently are mastered.

The Writing to Read approach uses computer-based instruction to introduce students to the forty-two phonemes of the English language and emphasizes the application of these sounds for writing sentences and stories the students create. The learning station in the Writing to Read laboratory is used to teach listening, speaking, writing, and reading skills. The Writing to Read laboratory experience at the school in this study was supplemented with basal skills instruction in the classroom.

Data Gathering Procedures

Several restrictions were placed on the eligibility of the students at each school used for this study. Students who had repeated kindergarten, come to school reading, or transferred into the system after September were eliminated as possible subjects in both schools. This restriction left populations of sixty-one students at the whole language school and 103

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students at the Writing to Read school. The time available for data collection allowed a complete population sample at the whole language school, but required a method of random selection from those students eligible for selection at the Writing to Read school. All otherwise eligible students at the Writing to Read school were assigned a uniform random number (0-1). Their names were then sorted into ascending order on the basis of the assigned random number. The evaluators then attempted to obtain data from the first 70 randomly selected students. Absenteeism and end-of-year transfers precluded getting seventy samples at the Writing to Read school, but yielded a sample size of sixty-seven students. Approximately the same number of students were chosen randomly from the seven kindergarten classes at the Writing to Read school. It was felt that randomization would yield a representative group of students among teachers at the Writing to Read school. Therefore, it was anticipated that there would be proportionate representation of high, average, and low performance students from each of these classes. Thus, any performance disproportionalities from within the Writing to Read school should be strictly a function of random error and not a result of any unrecognized bias or predisposition in the selection process.

There were three classes of students receiving whole language instruction at a school in the system using that approach. The total population of sixty-one kindergarten students at this school was used to form one complete performance group. At the Writing to Read school sixty-seven kindergarten students were selected randomly and evaluated so that a balanced design was achieved while allowing for the constraints imposed by the relatively short time frame available for testing the 128

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students used in this study.

In this study, the threats to internal validity were controlled as follows:

Maturation. Students were chosen at the end of the kindergarten school year. The developmental changes across all groups, therefore, was assumed to be in line with what would normally occur during a year in kindergarten. Kindergarten repeaters were eliminated to control for subjects being average age for kindergarten.

Testing. Two trained evaluators field tested fifteen kindergarten students who were not in the study to establish interrater reliability of the attitude test and the text-referenced oral reading passages that were used in this study.

Instrumentation. The same measuring instruments were used to evaluate oral reading performance and attitudes toward reading with all subjects in this study. The same evaluators collected all data on subjects in this study after interrater reliability had been established.

Statistical Regression. As previously stated, kindergarten repeaters and students entering kindergarten as readers were eliminated from this study to avoid the confounding effect of extreme outliers in the data. Comparable groups of students in both beginning reading programs were studied. This procedure allowed for proportionate groups of high, average, and low ability students between schools, which should have controlled for statistical regression.

Selection. All eligible kindergarten students in the three classes in the only school in the system using the whole language approach to reading formed the base group. Each eligible student at the Writing to Read school

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was assigned a random number from a uniform distribution to preclude selection of a nonrepresentative cross-section of students. Selection of students was based upon this randomly-assigned number and no other factor.

Experimental Mortality. It was anticipated that there would be approximately the same number of students at each school, as subjects were chosen at the end of the school year. The researcher only included subjects in the study who had program exposure for the entire school year and met the criteria of not being kindergarten repeaters or readers at the beginning of school.

Interaction of Selection and Maturation. Students from the Writing to Read school were chosen randomly to yield a sample size comparable to the sample taken at the whole language school. Characteristics between schools that might otherwise make interactions probable were, thereby, minimized.

The threats to external validity were controlled as follows:

Interaction of Selection and X. It is more desirable to assign subjects randomly to groups than to work with intact situations, as was the case in this study. The three classes of kindergarten students in the whole language group were from the only school in the district that was systematically implementing the whole language approach for reading instruction. The school using the Writing to Read program was also the only school in the system using this approach for beginning reading at the time of this research. The remaining kindergarten teachers in the system were using the traditional basal skills approach to teach beginning reading.

Reactive Arrangements. Teachers in both situations had been using

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both approaches to teach reading for one year prior to this study being initiated. For this reason it is believed that any novelty effect was minimal. Teachers' expectations of students were the variable that could not be controlled. Teacher enthusiasm and expectations were expected to vary some, and very enthusiastic teachers were possibly counterbalanced by ones with a low-keyed approach to instruction. In light of this possibility, a positive selection feature is that students representing all classes using each approach being studied were included and, therefore, all teachers were represented. Principal interest in programs may be a factor. The researcher saw no way to assess this possible variable.

Instruments

Interrater reliability was determined using two evaluators to rate independently fifteen kindergarten students who were not in the experimental groups on their attitudes toward reading and on their oral reading performance. The researcher planned to use the Wilcoxon Matched-Pairs Signed-Ranks Test to establish interrater reliability. However, the attitude and oral reading scores of the two evaluators yielded identical results, obviating the need for statistical verification.

Semantic Differential

Osgood, Suci, and Tannebaum report the established validity and reliability of the semantic differential technique which was used to measure student attitude toward learning to read in school.[2] The twelve pairs of adjectives that were used in this study came from a cross-cultural study of adjectives by Osgood, May, and Miron in 1975.[3] A modified

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replication of the 1975 study of first-grade reading attitudes by Warren and Frederick was used as a model for administering the semantic differential to subjects. For this study, the concept, "How does learning to read in school make you feel?" was used. The evaluators used the positive bipolar adjective in the sentence, "How (adjective) does learning to read in school make you feel?" for each of the twelve adjectives. The child's response was indicated by touching one of three clowns with hand spreads ranging from very far apart (a very positive reaction that was assigned a three-point value), to moderately far apart (a positive reaction that was assigned a two-point value), to nearly touching (a less positive reaction that was assigned a one-point value).[4]

The twelve adjectives represented three factors of the concept mentioned above which were identified by Osgood, Suci, and Tannenbaum as evaluative, potency, and activity. The evaluative, potency, and activity factors represent meaningful judgments of a concept. More specifically, the evaluative factor represents the descriptive judgment of a concept, whereas the potency factor represents a judgment of the power of a concept, and the activity factor reflects the movement judgment of a concept.[5] The adjectives that were used in this study representing the evaluative factor include: nice, good, happy, and smart. Adjectives representing the potency factor were: big, strong, old, and brave. The activity factor adjectives were: fast, noisy, sharp, and alive. In this study, the combined evaluative, potency, and activity scores were used as the measure of attitude of the individual student. Thus, the range of possible combined attitude scores was a minimum value of 12 and a maximum value of 36.

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The order for each adjective for the three factors was evaluative, potency, and activity (see appendix 3). During the test, the order of the clown's hand spread was reversed twice to prevent response sets (see appendix 4).[6] Only three clown hand spreads was presented to the kindergarten-age student. Kennedy reviewed the Hunter-Grundin Literacy Profiles and stated that the attitude portion of that profile used five graded faces to measure attitude toward reading, although using just three faces rather than five would have measured attitude without the complication of having to discriminate among five faces, which is difficult for the young child.[7]

DiVesta established the stability of the evaluative-potency-activity framework down to the second-grade level using twenty concepts in one study and one hundred concepts in each of two other studies.[8] However, although the attitude data were obtained through the use of adjectives which have been shown in the literature to equate to the three attitude attributes assigned, there was no prior definitive demonstration that use of these adjectives would necessarily measure attitudes toward learning to read when used in the question form employed in this investigation. Therefore, to confirm reliability, the individual responses within each of the three attitude attributes (evaluative, potency, and activity) were checked for correlation with each of the other three responses from the same student for that same attribute. This procedure was done for all 128 students in the sample. The Spearman's rho correlation coefficient was computed for each response pair (e.g. 1 & 2; 1 & 3; 1 & 4; 2 &3; 2 & 4; and 3 & 4). The corresponding t-test statistic was determined in order to find the likelihood that the responses were uncorrelated (table 2).

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Table 2.--Tests of Correlation within Attitude Responses

Variables		ATT "E1"	ATT "E2"	ATT"E3"
ATT "E4"	Corr Coef:	-0.0070	0.2442	0.4852
	Test Stat:	-0.0786	2.8272	6.2281
	Prob (x>X):	0.4687	0.0027**	0.0000**
ATT "E3"	Corr Coef:	0.1188	0.2070	
	Test Stat:	1.3425	2.3755	
	Prob (x>X):	0.0909	0.0095**	
ATT "E2"	Corr Coef:	0.1027		
	Test Stat:	1.1591		
	Prob (x>X):	0.1243		

*Significant at alpha = 0.05
**Significant at alpha = 0.01

Variables		ATT "P1"	ATT "P2"	ATT"P3"
ATT "P4"	Corr Coef:	0.1000	0.1355	0.0547
	Test Stat:	1.1280	1.5350	0.6153
	Prob (x>X):	0.1307	0.0636	0.2697
ATT "P3"	Corr Coef:	0.1377	0.2341	
	Test Stat:	1.5607	2.7029	
	Prob (x>X):	0.0605	0.0039**	
ATT "P2"	Corr Coef:	0.2176		
	Test Stat:	2.5023		
	Prob (x>X):	0.0068**		

*Significant at alpha = 0.05
**Significant at alpha = 0.01

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Table 2. --Continued.

Variables		ATT "A1"	ATT "A2"	ATT"A3"
ATT "A4"	Corr Coef:	0.1108	0.0516	0.4044
	Test Stat:	1.2516	0.5942	4.9640
	Prob (x>X):	0.1065	0.2767	0.0000**
ATT "A3"	Corr Coef:	0.0768	-0.0081	
	Test Stat:	0.8649	-0.0908	
	Prob (x>X):	0.1944	0.4639	
ATT "A2"	Corr Coef:	0.1567		
	Test Stat:	1.7806		
	Prob (x>X):	0.0387*		

*Significant at alpha = 0.05
**Significant at alpha = 0.01

With the possible exception of the first "Evaluative" attitude question which does not appear to demonstrate statistically significant correlation with the other three "Evaluative" questions, none of the attribute questions can be rejected as unrepresentative of all others for that same attribute. The reason that none of the attribute questions can be rejected is that each of the other response variables shows statistically significant correlation with at least one other response variable associated with that attribute, and statistically significant correlation can be chained through all four responses.

The teachers for one classroom representing each of the beginning reading approaches were interviewed and asked to predict how each of

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their individual students would respond to the specific attitude-measuring questions and also to predict what their general attitude would be in each of the three categories (evaluative, potency, and activity). In order to establish the concurrent validity of the attitude data, Spearman's rho correlation coefficient and its test statistic were employed to demonstrate the congruence of the student responses and corresponding teacher predictions (table 3).

Table 3.--Test of Correlation of Student Response with Teacher Prediction for Individual Attitude Questions

Student Attitude	Teacher Attitude	Spearman's rho	t-Statistic	(df)	Prob (x>X)
"E1"	"E1"	0.5266	2.7701	20	0.0059*
"E2"	"E2"	0.6155	3.4927	20	0.0011*
"E3"	"E3"	0.4368	2.1715	20	0.0210*
"E4"	"E4"	0.4408	2.1960	20	0.0200*
"P1"	"P1"	0.5629	3.0461	20	0.0032*
"P2"	"P2"	0.3608	1.7301	20	0.0495*
"P3"	"P3"	0.6986	4.3660	20	0.0001*
"P4"	"P4"	0.5146	2.6841	20	0.0071*
"A1"	"A1"	0.5524	2.9634	20	0.0038*
"A2"	"A2"	0.6574	3.9013	20	0.0004*
"A3"	"A3"	0.5413	2.8791	20	0.0046*
"A4"	"A4"	0.4035	1.9720	20	0.0313*

*Significant at alpha = 0.05

There is statistically significant correlation in every variable pair

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contrasted. Testing the teacher prediction of student responses to specific questions confirmed that these teachers were sufficiently familiar with their students to predict their responses accurately. In comparing the general attitude data versus teacher predictions, the results support the contention that the questions do measure the specifically associated attitude.

Oral Reading Performance Measures

The oral reading performance of the subjects was measured using text-referenced reading passages from the Brigance Diagnostic Inventory of Early Development (IED).[9] On the basis of oral reading performance on a pre-primer level reading passage, (see appendix 5), students were categorized as level zero readers with more than three reading word errors, level one readers with two or three reading word errors, or level two readers (to be further sub-categorized below) with no or one reading word error. The level two readers who made no or one error, were given the IED primer reading passage to read, (see appendix 6), in order to categorize more precisely their reading performance. At this higher level, if the readers missed five words, the testing was discontinued and they remained categorized as level two readers. If they missed three or four words on the primer reading passage, they were categorized as level three readers. Students missing two or less words at this level were considered level four readers, the highest category represented.

Bagnato indicates that the IED "is a multifactor developmental measure which effectively blends norm- and criterion-referenced curricular qualities, yet has no self-contained normative base."[10] He also

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states that "item placement and skill sequencing on the IED were accomplished by reviewing traditional scales and resources (e.g., Gesell, Bayley, Griffith, White, Lavatelli)" to evaluate and establish the skill sequences and the developmental ages of children. Moreover, the measure's quality and practicality are supported by the field testing of the final edition of the scale by over one hundred developmental specialists in various clinical and educational settings in sixteen states.[11]

Because the IED has a broad survey of developmental processes and a merger of norm- and criterion-based features, Bagnato has evaluated the IED as being "one of the best and most practical" criterion-referenced developmental batteries.[12] Therefore, he stated that "content validity appears to be and should be adequate."[13] Additional endorsement of the appropriateness of the IED comes from Gory's review of the Brigance Diagnostic Inventory:

> References used to set development levels at which various skills typically are mastered are available in the [IED] test manual. This method of norm-referencing test items has been used, reasonably, in lieu of specific normative studies. . . . The IED should receive wide-spread use by preschool, elementary school, and special education staff interested in child assessment outcome products that are relevant to curriculum, intervention, and educational program planning.[14]

The vocabulary of the reading passages that were used to assess oral reading performance in this study were referenced to the sight vocabulary of eleven major basal reading texts, including Scott, Foresman, the basal series adopted by the school system represented in this study.[15] The passages are, therefore, appropriate for the assessment of basic sight vocabulary that the population in this study might have had knowledge of through classroom use of Scott, Foresman readiness material. Thus, since

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the reading performance variable was attained by an established and generally accepted method, there was no need to reconfirm that variable. Additionally, the Metropolitan Readiness Test is an instrument with confirmed validation and reliability and required no further verification.

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ENDNOTES

[1]Albert H. Brigance, Brigance Diagnostic Inventory of Early Development (Woburn, Mass.: Curriculum Associates, Inc., 1978), 214-15.

[2]Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Chicago: University of Illinois Press, 1975), 192-95.

[3]Charles E. Osgood, William H. May, and Murray S. Miron, Cross-Cultural Universals of Affective Meaning (Chicago: University of Illinois Press, 1975), 109, 115, 172, 418-19.

[4]Ann Warren and E. Coston Frederick, "A Comparative Study of Attitudes of First Grade Children in Two Teading Programs--Individualized and Basal," Reading Horizons 15 (Summer1975): 190-91.

[5]Ibid.

[6]Ibid., 192.

[7]Patricia H. Kennedy, "Review of Hunter-Grundin Literacy Profiles," in The Ninth Mental Measurements Yearbook, ed. James V. Mitchell, Jr. (Lincoln, Nebraska: The University of Nebraska Press, 1985), 1:672.

[8]Francis J. DiVesta, "A Developmental Study of the Semantic Structures of Children," Journal of Verbal Learning and Verbal Behavior 5 (June 1966): 249.

[9]Brigance, Inventory of Early Development, 214-15.

[10]Stephen J. Bagnato, "Review of Brigance Diagnostic Inventory of

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Early Development," in The Ninth Mental Measurements Yearbook, ed. James V. Mitchell, Jr. (Lincoln, Nebraska: The University of Nebraska Press, 1985), 1:219.

[11]Ibid.

[12]Ibid.

[13]Ibid.

[14]Elliot L. Gory, "Review of Brigance Diagnostic Inventory of Early Development," in The Ninth Mental Measurements Yearbook, ed. James V. Mitchell, Jr. (Lincoln, Nebraska: The University of Nebraska Press, 1985), 1:221.

[15]Brigance, Inventory of Early Development, 198, 214-15.

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CHAPTER 4

RESEARCH FINDINGS

The research findings of this study will be presented in this chapter. The statistical techniques that were used will be discussed and the subsequent findings will be presented and examined in relation to each hypothesis.

The objective of this study was to determine the effect of two different teaching methods, whole language and Writing to Read, on kindergarten student oral reading ability and attitudes toward learning to read in school. The whole language method was used in three kindergarten classrooms at an elementary school systematically using that approach for beginning reading instruction. The Writing to Read method was used for reading instruction in seven classrooms at another elementary school.

This study focused on the following concerns:

1. Is there a significant difference in oral reading performance between kindergarten students in the whole language and Writing to Read beginning reading programs as measured by individually reading aloud a text-referenced reading passage?

2. Is there a significant difference in attitude toward reading between kindergarten students in the whole language and Writing to Read beginning reading programs as measured by an individually-administered semantic differential instrument which measures the attitude factors of a

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specific concept pertaining to reading?

3. Do kindergarten students who exhibit different attitudes toward learning to read show a significant difference in oral reading performance as measured by individually reading aloud a text-referenced reading passage?

Overview of Statistical Procedures

The oral reading performance test and the attitude toward reading test yield ordinal data. The Mann-Whitney U test was used to analyze the two-sample case data, e.g. method or gender. Likewise, the Kruskal-Wallis one-way analysis of variance was utilized for the k-sample case data, e.g. reading performance as a function of attitude or socioeconomic status (SES). The principal assumption in using these tests was that there was an underlying continuous distribution which could not be measured by anything higher than an ordinal scale. When a Kruskal-Wallis test indicated significance, all pairs of samples (e.g. 1 & 2; 1 & 3; and 2 & 3) were evaluated using the Mann-Whitney U test.

Thus, the Mann-Whitney U test was used initially to analyze the following data:

- Student attitude as a function of the teaching method used
- Oral reading performance as a function of the teaching method used
- The attitudes of males and females toward reading
- The oral reading performance of males and females

The Kruskal-Wallis one-way analysis of variance was used initially to analyze the following data:

- Attitudes toward reading as a function of socioeconomic status

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(SES) of students

- Oral reading performance as a function of the socioeconomic status (SES) of students
- Oral reading performance as a function of attitudes toward learning to read.

Description of Hypotheses' Findings

The research findings will be reported in relation to each hypothesis, as follows:

Hypothesis one: There is no significant difference in the oral reading performance of students in the whole language or Writing to Read beginning reading programs at the end of kindergarten.

As stated previously, sixty-one students at the whole language school and sixty-seven students at the Writing to Read school were given a text-referenced pre-primer reading passage to read. Some students also were given a text-referenced primer reading passage to read. Students reading the pre-primer level passage were categorized as level-zero readers with more than three reading word errors, level-one readers with two or three reading word errors, or level-two readers (to be further sub-categorized below) with no or one reading word error. The level-two readers who made no or one error, were given the primer reading passage to read in order to categorize more precisely their reading performance. At this higher level, if the readers missed five words, the testing was discontinued and they remained categorized as level-two readers. If they missed three or four words on the primer reading passage, they were categorized as level-three readers. Students missing two or less words

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at this level were considered level-four readers, the highest category represented. The reading evaluations yielded the following results (table 4):

Table 4.--Oral Reading Performance Levels of the Two Schools Studied

	Level 1	Level 2	Level 3	Level 4	Level 5
Whole Language School	48	3	6	1	3
Writing to Read School	60	3	2	1	1
Total	108	6	8	2	4

The most obvious observed characteristic of the data is the relatively small dispersion of oral readers. Only about twenty (15.6%) of the students tested could read at any of the four higher reading levels, compared to 108 (84.4%) of the students who could read at only the lowest level, if at all. When these data were subjected to the Mann-Whitney U test, these results were obtained (table 5):

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Table 5.--Whole Language and Writing to Read Oral Reading Performance Scores

Sample Means: Whole Language School: 0.492 Writing to Read School: 0.209		
Large Sample Test	Sum of the Ranks:	4164.5
	Test Statistic (T):	2273.5
	Mean of T:	2043.5
	Stn dev of T:	209.6
	z-value:	1.097
	Prob (|z| > | z-value |):	0.2725

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level.

Hypothesis two: There is no significant difference in the oral reading performance of males and females at the end of kindergarten.

There were fifty-three males and seventy-five females included in the study. The oral reading performance by gender yielded these results (table 6):

Table 6.--Oral Reading Performance Scores Analyzed in Relation to Gender

Sample Means: Males: 0.264 Females: 0.400		
Large Sample Test	Sum of the Ranks:	3274.5
	Test Statistic (T):	1843.5
	Mean of T:	1987.5
	Stn dev of T:	206.7
	z-value:	-0.697
	Prob (|z| > | z-value |):	0.4860

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Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level.

Hypothesis three: There is no significant difference in the oral reading performance of students based on socioeconomic status at the end of kindergarten.

As mentioned in chapter three, student lunch status was used as a socioeconomic status (SES) indicator. Of the students studied, fifty-four were on free lunch status, twelve students had reduced lunch status, and sixty-two students were on full-price lunch status. From these data the following results were obtained using the Kruskal-Wallis one-way analysis of variance (table 7):

Table 7.--Student Oral Reading Performance Analyzed as a Function of SES

Sample Means: Free Lunch: 0.093	Reduced Lunch: 0.500	Full-Price Lunch: 0.532

Chi-square approximation

Test Statistic (T): 3.0937
Degrees of Freedom: 2
Prob (x > 3.0937): 0.2129

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level. Two (16.7%) of twelve students in the middle SES category scored higher than the lowest SES category, while fifteen (24.2%) of sixty-two students in the highest SES category scored well.

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Hypothesis four: There is no significant difference in the attitudes of students toward reading in the whole language or Writing to Read beginning reading programs at the end of kindergarten.

The combined attitude scores of students taught by the two different methods of beginning reading instruction were analyzed using the Mann-Whitney U test. The following results were obtained (table 8):

Table 8.--Attitudes of Students toward Reading in the Whole Language and Writing to Read Programs

Sample Means: Whole Language School: 28.83 Writing to Read School: 26.60		
Large Sample Test	Sum of the Ranks:	4558
	Test Statistic (T):	2667
	Mean of T:	2043.5
	Std dev of T:	209.6
	z-value:	2.975
	Prob (|z| > |z-value|):	0.0029

Conclusion: The test results support rejection of the null hypothesis at the 0.05 significance level. Thus, this research indicates that the average combined attitude factor of the whole language students is significantly higher than that observed in the Writing to Read students.

Hypothesis five: There is no significant difference in the attitudes of males and females toward reading at the end of kindergarten.

A further study of student attitudes toward reading by gender yielded the following results when analyzed by the Mann-Whitney U test (table 9):

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Table 9.--Attitudes of Students toward Reading Analyzed by Males and Females

Sample Means: Males: 27.28 Females: 27.93		
Large Sample Test	Sum of the Ranks:	3206.5
	Test Statistic (T):	1775.5
	Mean of T:	1987.5
	Std dev of T:	206.7
	z-value:	-1.026
	Prob (|z| > |z-value|):	0.3051

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level.

Hypotheses six: There is no significant difference in the attitudes of students toward reading based on socioeconomic status at the end of kindergarten.

Student attitudes toward reading were evaluated also by socioeconomic status (SES). The SES profile of each school was represented by the following data (table 10):

Table 10.--SES Profile by Schools

	Full-Price Lunch	Reduced Lunch	Free Lunch
Whole Language School (N=61)	39 (63.9%)	7 (11.5%)	15 (24.6%)
Writing to Read School (N=67)	23 (34.3%)	5 (7.5%)	39 (58.2%)

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The combined attitude toward reading scores of the sixty-two full-price lunch students, the twelve reduced lunch students, and the fifty-four free lunch students were analyzed using the Kruskal-Wallis one-way analysis of variance and the following results were obtained (table 11):

Table 11.--Analysis of Student Attitudes toward Reading in Relation to SES

Sample Means:	Free Lunch: 26.72	Reduced Lunch: 27.75	Full-Price Lunch: 28.47

Chi-square approximation

Test Statistic (T):	6.3377
Degrees of Freedom:	2
Prob (x > 6.3377):	0.0421

Conclusion: The test results support rejection of the null hypothesis at the 0.05 significance level. On the basis of these results, we may infer that the average combined attitude factor of students toward reading in at least one of the three socioeconomic categories is significantly different from that exisiting in at least one other socioeconomic category. To determine which category or categories differ significantly, the Mann-Whitney U test was conducted on each pair of categories (SES 0 & SES 1; SES 0 & SES 2; and SES 1 & SES 2) and generated three additional hypotheses under hypothesis six, as follows:

Hypothesis six-point-one: There is no significant difference in the attitudes of students toward reading in the free or reduced lunch SES

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categories at the end of kindergarten.

The combined attitude toward reading scores of the fifty-four free lunch students and the twelve reduced lunch students were analyzed using the Mann-Whitney U test, yielding the following results (table 12):

Table 12.--Attitudes of Free and Reduced Lunch Students toward Reading

Mean Samples: Free Lunch: 26.72 Reduced Lunch: 27.75		
Large Sample Test	Sum of the Ranks:	1756.5
	Test Statistic (T):	271.5
	Mean of T:	324
	Std dev of T:	60.15
	z-value:	-0.873
	Prob (|z| > | z-value |):	0.3828

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level.

Hypothesis six-point-two: There is no significant difference in the attitudes of students toward reading in the reduced or full-price lunch SES categories at the end of kindergarten.

The combined attitude toward reading scores of the twelve reduced lunch students and the sixty-two full-price lunch students were analyzed using the Mann-Whitney U test, and the following results were obtained (table 13):

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level.

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Table 13.--Attitudes of Reduced and Full-Price Lunch Students toward Reading

Sample Means: Reduced Lunch: 27.75 Full-Price Lunch: 28.47		
Large Sample Test	Sum of the Ranks:	420.5
	Test Statistic (T):	342.5
	Mean of T:	372
	Std Dev of T:	68.19
	z-value:	-0.433
	Prob (|z| > | z-value |):	0.6653

Hypothesis six-point-three: There is no significant difference in the attitudes of students toward reading in the free or full-price lunch SES categories at the end of kindergarten.

The combined attitude toward reading scores of the fifty-four free lunch students and the sixty-two full-price lunch students were analyzed using the Mann-Whitney U test, yielding the following results (table 14):

Table 14.--Attitudes of Free and Full-Price Lunch Students toward Reading

Sample Means: Free Lunch: 26.72 Full-Price Lunch: 28.47		
Large Sample Test	Sum of the Ranks:	2700.5
	Test Statistic (T):	1215.5
	Mean of T:	1674
	Std dev of T:	180.7
	z-value:	-2.538
	Prob (|z| > | z-value |):	0.0112

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Conclusion: The test results support rejection of the null hypothesis at the 0.05 significance level. On the basis of these results, we may infer that the average combined attitude factor of students in the full-price lunch program is significantly higher than that observed in the free lunch program students.

As has been demonstrated, the test results of hypothesis four indicated a significant difference in attitudes between students receiving the whole language and Writing to Read approaches of reading instruction. Additionally, the results of hypothesis six indicated significant differences in attitudes toward reading in relation to socioeconomic status (SES). To further investigate the method and SES variables, the attitude data was examined using a general linear model analysis of variance (GLM-ANOVA).

It is recognized that this test may not be as valid as the nonparametric procedures because we are dealing with ordinal vice interval data. However, accounting for this fact, the findings would tend to be less sensitive. The less powerful ANOVA results support and verify the validity of the nonparametric findings with respect to the effect of method but fail to verify the findings with respect to SES, as the following results illustrate (table 15):

Conclusion: The results shown in all of the ANOVA reports suggest that method is a much larger source of variation than SES. ANOVA report one indicates that the interaction factor effect is not significant. ANOVA report two does not support the contention that SES is a significant source of variation in attitude when method is considered simultaneously. Additionally, examination of ANOVA reports two and three indicates that

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the nonparametric identification of method as significant is valid.

Table 15.--Analysis of Student Attitudes toward Reading in Relation to Method and SES Factors

Analysis of Variance Report 1 (all factors)

Source	DF	Sum-Squares	Mean Square	F-Ratio	Prob>F
A (Method)	1	160.0746	160.0746	11.46	0.0010
B (SES)	2	30.0593	15.02965	1.076	0.3442
AB	2	8.311	4.156	0.297	0.7436
Error	122	1704.722	13.97313		
Total	127	1900.555			

Analysis of Variance Report 2 (no interaction factor)

Source	DF	Sum-Squares	Mean Square	F-Ratio	Prob>F
A (Method)	1	160.0746	160.0746	13.794	0.0003
B (SES)	2	30.0593	15.02965	1.09	0.3395
Error	124	1710.421	13.79372		
Total	127	1900.555			

Analysis of Variance Report 3 (method factor only)

Source	DF	Sum-Squares	Mean Square	F-Ratio	Prob>F
A (Method)	1	160.0746	160.0746	11.59	0.0009
Error	126	1740.48	13.81333		
Total	127	1900.555			

However, in relation to SES, this conclusion suggests that the nonparametric test results which found SES significant may have been

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influenced by the different relative distribution of SES categories in the two schools, which reflects a higher proportion of low SES students in the Writing to Read school (58.2%) than in the whole language school (24.6%), as tables 1 and 10 demonstrate.

To further investigate the SES influence, Kruskal-Wallis one-way analysis of variance tests were performed using the whole language data only and the Writing to Read data only, partitioned by SES categories. The results were used to test the following hypotheses:

Hypothesis six-point-four: There is no significant difference in the attitudes of students toward reading at the end of kindergarten in the whole language approach based on socioeconomic status (table 16).

Table 16.--Analysis of Student Attitudes toward Reading in the Whole Language Approach in Relation to SES

Sample Means:	Free Lunch: 28.13	Reduced Lunch: 28.00	Full-Price Lunch: 29.26

Chi-square approximation

Test Statistic (T):	0.9392
Degrees of Freedom:	2
Prob (x > 0.9392):	0.6253

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level.

Hypothesis six-point-five: There is no significant difference in the attitudes of students toward reading at the end of kindergarten in the Writing to Read approach based on socioeconomic status (table 17).

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Table 17.--Analysis of Student Attitudes toward Reading in the Writing to Read Approach in Relation to SES

Sample Means:	Free Lunch: 26.18	Reduced Lunch: 27.40	Full-Price Lunch: 27.13

Chi-square approximation

Test Statistic (T):	2.2917
Degrees of Freedom:	2
Prob (x > 2.2917):	0.3180

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level.

Since the SES failed to demonstrate a significant effect within either approach for beginning reading instruction, the observed significant differences in attitude toward learning to read may be attributed to the teaching method without regard to SES.

Hypothesis seven: There is no significant difference in the oral reading performance of students exhibiting different attitudes toward learning beginning reading at the end of kindergarten.

As stated earlier in this study, the student attitude score was represented by the combined evaluative, potency, and activity values obtained when students were evaluated. The possible range of combined attitude scores was a minimum value of twelve and a maximum value of thirty-six. However, the actually observed range of attitude scores for students in this study was a minimum value of twenty-two to a maximum value of thirty-six. Therefore, attitude scores were subdivided and categorized such that a combined score in the range of 22-26 represented

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the lowest attitude category; a combined score in the range of 27-31 represented the middle attitude category; and a combined score in the range of 32-36 represented the highest attitude category. Within these ranges, there were fifty-six students in the lowest attitude category; forty-five students in the middle category; and twenty-seven students in the highest category. This information was analyzed with the Kruskal-Wallis one-way analysis of variance and yielded the following results (table 18):

Table 18.--Analysis of Student Oral Reading Performance and Attitudes toward Reading

Sample Means:	Attitude Range of 22-26: 0.196	Attitude Range of 27-31: 0.333	Attitude Range of 32-36: 0.667

Chi-square approximation

Test Statistic (T): 2.7371
Degrees of Freedom: 2
Prob (x > 2.7371): 0.2545

Conclusion: There is insufficient evidence to reject the null hypothesis at the 0.05 significance level. Therefore, there was not a demonstratedly significant difference in student oral reading ability between these attitude groups.

The Metropolitan Readiness Test results were examined to determine the relative distribution of reading readiness in relation to oral reading performance and student attitudes toward reading. The student oral reading performance levels in relation to MRT pre-reading skills composite stanine scores were distributed as follows (table 19):

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Table 19.--Distribution of Student Oral Reading Performance Levels (0-4) in Relation to MRT Pre-Reading Skills Composite Stanine Scores (1-9)

	Oral Reading Performance Levels				
	Level 0 Readers	Level 1 Readers	Level 2 Readers	Level 3 Readers	Level 4 Readers
MRT Stanine Scores					
1	3	0	0	0	0
2	8	0	0	0	0
3	16	1	0	0	0
4	17	0	0	0	0
5	20	0	0	0	0
6	19	2	0	0	1
7	14	1	5	2	2
8	6	1	2	0	1
9	5	1	1	0	0

As anticipated, readers (levels 1-4) had higher stanine scores on the average than nonreaders (level 0). The MRT stanine results for the whole language and Writing to Read schools were as follows (table 20):

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Table 20.-- MRT Pre-Reading Skills Composite Stanine Score Distribution by Schools

	MRT Stanine Scores								
	1	2	3	4	5	6	7	8	9
Whole Language School	3	5	13	12	9	6	10	3	0
Writing to Read School	0	3	4	5	11	16	14	7	7

It is noted that the MRT stanine scores between the whole language and Writing to Read schools do not appear to be distributed similarly. For this reason, these stanine scores were subjected to a Mann-Whitney U test to examine the following hypothesis:

Hypothesis eight: There is no significant difference in the reading readiness of students in the whole language and Writing to Read programs as measured by the Metropolitan Readiness Test (MRT). These results are shown in table 21:

Conclusion: The test results support rejection of the null hypothesis at the 0.05 significance level. The MRT stanine scores for the Writing to Read students are significantly higher than those for the whole language students.

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Table 21.--Analysis of the Whole Language and Writing to Read MRT Pre-Reading Skills Composite Stanine Scores

Sample Means: Whole Language School: 4.508 Writing to Read School: 6.060

Large Sample Test	Sum of the Ranks:	3050.5
	Test Statistic (T):	1159.5
	Mean of T:	2043.5
	Stn dev of T:	209.6
	z-value:	-4.217
	Prob (|z| > | z-value |):	0.0000

The Metropolitan Readiness Test results were examined also to see the relative distribution of the MRT reading readiness scores in relation to student attitudes toward reading. The distribution of attitude categories and stanine scores are as follows (table 22):

The relative distribution of the MRT stanine scores did not appear to be significantly different. A Kruskal-Wallis ANOVA test yielded a level of significance of 0.1901. These results did not justify a conclusion that the distribution of stanine scores varied significantly among attitude categories.

The implications of the chapter four results will be discussed in chapter five.

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Table 22.-- Dispersion of Student Attitude toward Reading Categories (lowest to highest) in Relation to MRT Stanine Scores (1-9)

	Attitude Categories		
	22-26	27-31	32-36
MRT Stanine Scores			
1	1	2	0
2	5	2	1
3	11	3	3
4	6	9	2
5	8	7	5
6	11	5	6
7	10	8	6
8	2	5	3
9	2	4	1

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CHAPTER 5

SUMMARY, FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

The objective of this study was to determine the effect of two different teaching methods, whole language and Writing to Read, on kindergarten student oral reading ability and attitudes towards learning to read in school. The research findings of this objective are discussed in this chapter in the following sections: (1) Summary, (2) Findings, and (3) Implications and Recommendations.

Summary

The 1980's have been a period of examining and critiquing current educational practices. The implications of several important national studies are that there is a need for improving literacy in general. Reading methodology in particular has received much criticism for not fulfilling this literacy need. The beginning reading instruction of the young child has been suggested as the most economically feasible time to begin improved reading instruction . Thus, the objective of this research was to study two relatively new methods of beginning reading instruction in an attempt to add to current reading research knowledge.

To conduct this research, the whole language and Writing to Read beginning reading methods were studied. The whole language method was used in three kindergarten classrooms at an elementary school

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systematically using that approach for beginning reading instruction. The Writing to Read method was used for reading instruction in seven classrooms at another elementary school. This ex post facto study was an opportunity for a practical examination of these teaching methodologies.

The student oral reading performance and attitude toward reading of the two groups were studied using the Mann-Whitney U test to analyze the two-sample case data. Additionally, the Kruskal-Wallis one-way analysis of variance was utilized for the k-sample case data.

Findings

The sixty-one whole language and sixty-seven Writing to Read students did not differ significantly in their oral reading performance. However, hypothesis one results suggest that there may be a difference between the two methods, since thirteen (21.3%) of the sixty-one whole language students and only seven (10.4%) of the sixty-seven Writing to Read students could read at some level higher than level zero. Taking a larger sample might have demonstrated this difference more strongly.

When looking at oral reading performance in relation to gender (hypothesis two), six (11.3%) of the fifty-three male students and fourteen (18.7%) of the seventy-five female students scored in the higher reading levels. Therefore, there was less relative difference in student oral reading ability with respect to student gender than was observed with respect to teaching method. However, this observed difference did not prove to be statistically significant.

Oral reading performance and socioeconomic status (SES) were examined also (hypothesis three). Only three (5.6%) of fifty-four students

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in the lowest SES category demonstrated higher reading ability. Two (16.7%) of twelve students in the middle SES category scored higher than the lowest SES category, while fifteen (24.2%) of sixty-two students in the highest SES category scored well. Again, the observed difference in reading performance did not prove statistically significant. This lack of statistical significance in all tests performed on the reading performance data may have been abetted by the high degree of skewness in the distribution with most of the data points clustered at the lowest reading level.

A study of student attitudes toward reading in the whole language and Writing to Read methods supports rejecting hypothesis four and indicates that there is a significant difference between the two methods in relation to attitude. The results imply that the average combined attitude factor of the whole language students is significantly higher than that observed for the Writing to Read students. A significant difference was not evident in examining attitudes by gender, however (hypothesis five).

When attitude toward reading was studied in relation to SES, the results support rejecting hypothesis six. From these results we may infer that the average combined attitude factor of students toward reading in at least one of the three socioeconomic categories (free, reduced, or full-price lunch) is significantly different from that exisiting in at least one other socioeconomic category. A detailed examination of student attitudes toward reading in relation to SES (hypotheses six-point-one, six-point-two, and six-point-three) demonstrated a significant difference between free and full-price lunch students in hypothesis six-point-three. Thus, we may infer that the average combined attitude factor of full-price

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lunch students is significantly higher than that observed for free lunch students.

The method and SES variables were further investigated to examine the attitude data. These results support and verify the validity of the nonparametric findings with respect to the effect of method and suggest that method is a larger source of variation than SES. Additionally, the results fail to verify the validity of the nonparametric findings with respect to SES.

It was necessary to clarify further the different relative distributions of SES categories in the two schools, for there was a higher proportion of low SES students in the Writing to Read school than in the whole language school. Therefore, additional analyses were performed. These results, which were reported in hypotheses six-point-four and six-point-five, indicated that SES failed to demonstrate a significant effect within either approach for beginning reading instruction. Thus, it appears that the observed significant difference in attitude toward learning to read may be attributed to the teaching method without regard to SES.

Oral reading performance was analyzed also in relation to attitude groups. However, there was not a demonstratedly significant difference in student oral reading ability between these attitude groups, as the results of hypothesis seven indicate.

An examination of the MRT results regarding the relative distribution of reading readiness in relation to oral reading performance and student attitudes toward reading indicate that students reading on levels 1-4 had higher stanine scores on the average than nonreaders (level 0). When the

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MRT stanine scores were examined between reading methods, it was found that the MRT scores for the Writing to Read students were significantly higher than those for the whole language students. Given the distribution of the MRT scores, it would have been expected that more of the Writing to Read students would have shown better oral reading ability than was observed. In actuality, a smaller percentage of Writing to Read students demonstrated oral reading ability than was observed among whole language students. Although educators acknowledge that the MRT does not test oral reading, the incongruity in the MRT scores suggests that this is an area that warrants further study. Additionally, a study of the relative distribution of the MRT reading readiness scores in relation to student attitudes toward reading did not justify a conclusion that the distribution of stanine scores varied significantly among attitude categories.

Implications and Recommendations

The results of this study suggest that regardless of SES, the students who received whole language instruction had a statistically significant better attitude toward learning to read in school than was observed for students who received Writing to Read instruction. Furthermore, it was supported that although students from the highest SES category had a statistically significant difference in attitude toward learning to read in school when compared to students of the lowest SES category, this difference could be attributed to the disparate distributions of SES within each school. This conclusion is supported by results which indicated method is a significant contributor to the observed variation while SES is not. These results are limited to the urban population in this study. It is

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recommended that this research be replicated to determine how similar populations in other urban areas would perform when using the same two methods.

It appears that the whole language approach is relatively more successful in teaching beginning reading to kindergarten students in that thirteen (21.3%) of the sixty-one whole language students and only seven (10.4%) of the sixty-seven Writing to Read students could read. One policy implication may relate to cost. The Writing to Read program is an expensive program. Since there is no statistical difference to be found in oral reading performance between the two programs, budget-conscious school systems may prefer the whole language approach.

The results of the Metropolitan Readiness Test scores indicate that schools presently using the Writing to Read equipment might realize greater reading gains by employing a combination of the whole language and Writing to Read approaches. It is recommended that schools using the Writing to Read approach continue to use that system for skills instruction but consider supplementing that instruction with a whole language classroom instructional approach. This combination would add a complementary classroom instructional approach and would allow a contextual classroom follow-up of skills instruction.

Conversely, schools not having the Writing to Read equipment should consider preparing their teachers to implement whole language instruction, as it appears that regardless of SES or sophisticated technology, the whole language approach is relatively more successful in teaching the young child beginning reading while fostering positive attitudes toward learning to read in school.

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APPENDIX 1

LETTER FROM JUDITH M. SCHURMAN, COORDINATOR

PRE-SCHOOL AND ELEMENTARY EDUCATION

FOR THE MINISTER OF EDUCATION

QUEBEC, CANADA

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Gouvernement du Québec
Ministère de l'Éducation
Direction des services éducatifs aux anglophones

Montreal, April 29th, 1987

Mrs. Ann-Carol Holley
1330 Buckingham Avenue
Norfolk, Virginia 23508

Dear Mrs. Holley:

Ken Goodman's book has put Quebec on the map as for as whole language is concerned. I am pleased to note that you have adopted a whole-language philosophy in your classroom. Even though our official program endorses that philosophy, not all teachers are implementing it. Any research that you do which would help us in our in-service work would be greatly appreciated. Rather than basing your work on standardized tests, you might consider adopting an ethnographic approach. No standardized test I know of could come close to providing data of any significance for your study.

As requested, I have enclosed three (3) documents concerning language arts in the kindergarten, five (5) on elementary, and one (1), "Guide for Evaluation in the Classroom" which is addressed to high school teachers. The latter contains a general introduction section which you may find interesting. The Kindergarten and Elementary Guides contain the variety of formal and informal procedures for monitoring student progress that you refer to in your letter. For further information on the work being done in Edmonton, I recommend that you contact Margaret Stephenson whose address is included.

.../2

600. rue Fullum
Montréal H2K 4L1

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Please feel free to contact me if you require further information.

Yours truly,

Sylvie Séguin
for Judith M.-Schurman
Coordinator, Pre-School and
Elementary

JMS/ss

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OFFICE OF THE
Minister of Education
WELLINGTON, NEW ZEALAND

24 APR 1987

Ann-Carol Holley
1330 Buckingham Avenue
Norfolk
Virginia 23508
UNITED STATES OF AMERICA

Dear Ann-Carol Holley,

Thank you for your letter of 1 March enquiring about procedures for evaluating pupils' progress in language development.

Because standardized tests tend to focus on isolated skills and words which are inappropriate for monitoring whole language development, New Zealand teachers use instead informal methods to evaluate children's progress. Teachers monitor and plan programmes for their pupils based on sensitive observation of their behaviour. A clear picture of what a child can do is essential. In reading for example, this involves finding out

- how well the child uses the strategies of sampling, predicting, confirming and self correcting;
- the child's knowledge of how to use the available cues and how far these are integrated;
- whether the child insists that text makes sense;
- the child's attitudes to reading and perception of his or her own reading behaviour;
- whether the approach and materials are suitable for the child.

Careful monitoring of children's oral and written language development is regularly done with the children and involves records of teacher/pupil conferences, writing portfolios, group discussions, running records and a variety of diagnostic procedures. Two books that may be helpful to you and which would provide additional information are:

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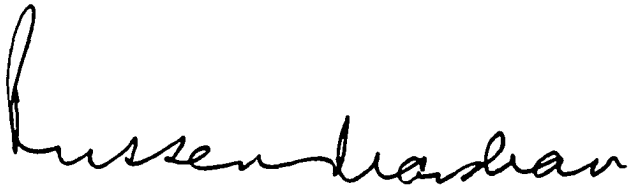
1 Reading in Junior Classes published by the Department of Education, Wellington, 1985, and available in the United States from Richard Owen Publishers Inc, Rockefeller Centre, Box 819, NY, 10185.

2 The Early Detection of Reading Difficulties by Marie M Clay published by Heinemann Educational Books and available from 4 Front Street, Exeter, New Hampshire, 03833.

I have enclosed a copy of Supplement To The Syllabus : Language in the Primary School : English.

I hope this information will be helpful to you. My best wishes for your work in the whole language approach.



Minister of Education

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APPENDIX 3

KINDERGARTEN SEMANTIC DIFFERENTIAL

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KINDERGARTEN SEMANTIC DIFFERENTIAL
(START WITH CLOWN FOLDER 1)

1.E Touch the clown's hands that show how nice learning to read in school makes you feel.

2.P Touch the clown's hands that show how big learning to read in school makes you feel.

3.A Touch the clown's hands that show how fast learning to read in school makes you feel.

4.E Touch the clown's hands that show how good learning to read in school makes you feel.

(NOW SWITCH TO CLOWN FOLDER 2)

5.P Touch the clown's hands that show how strong learning to read in school makes you feel.

6.A Touch the clown's hands that show how noisy learning to read in school makes you feel.

7.E Touch the clown's hands that show how happy learning to read in school makes you feel.

8.P Touch the clown's hands that show how old learning to read in school makes you feel.

(NOW SWITCH TO CLOWN FOLDER 3)

9.A Touch the clown's hands that show how sharp learning to read in school makes you feel.

10.E. Touch the clown's hands that show how smart learning to read in school makes you feel.

11.P Touch the clown's hands that show how brave learning to read in school makes you feel.

12.A Touch the clown's hands that show how alive learning to read in school makes you feel.

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APPENDIX 4

CLOWN DRAWINGS USED FOR KINDERGARTEN ATTITUDE MEASURE

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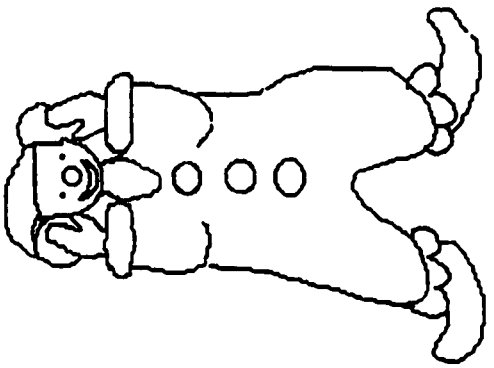

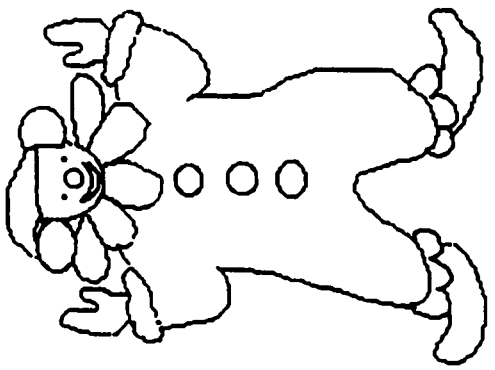

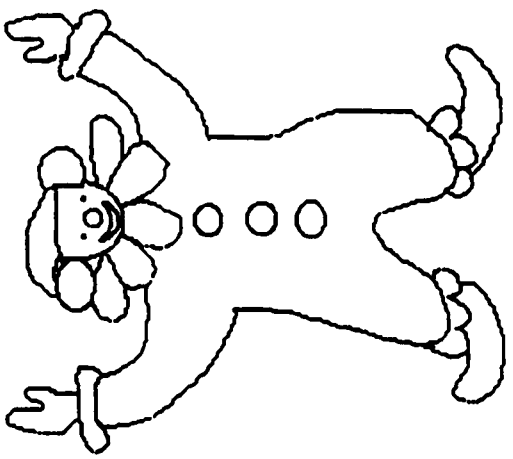

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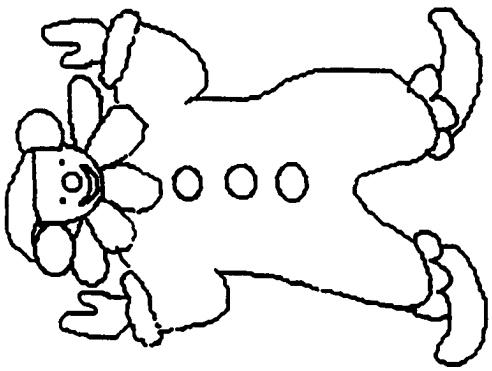

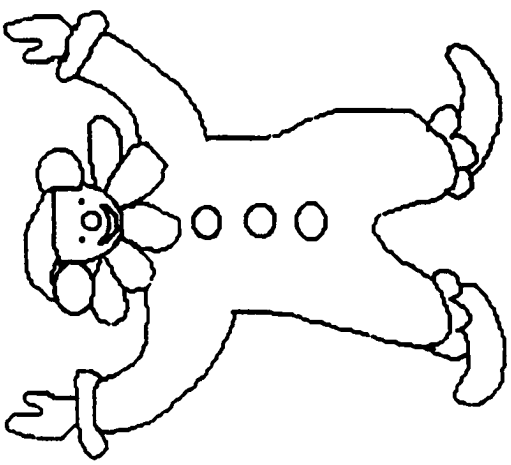

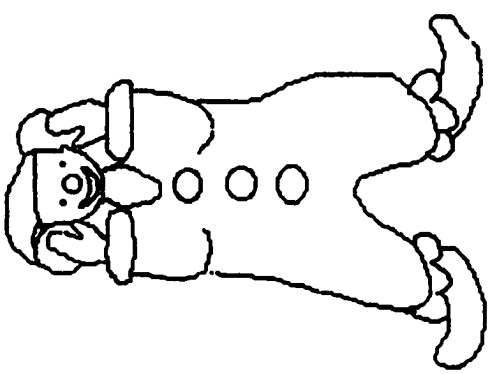

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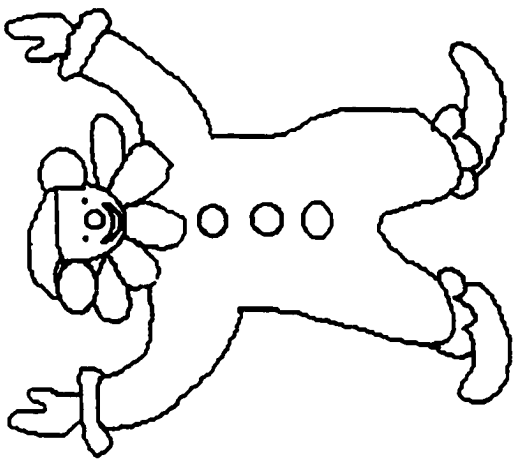

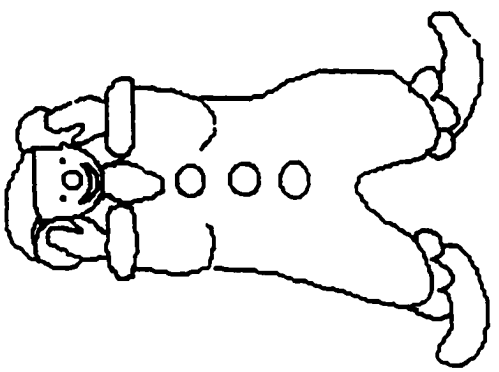

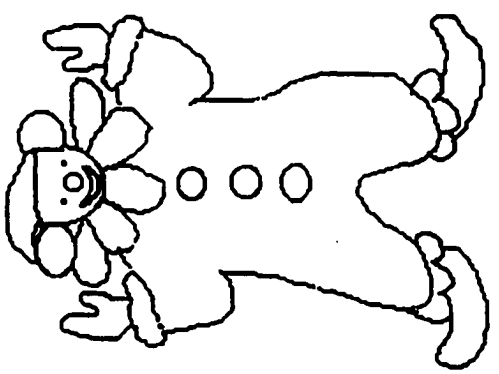

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APPENDIX 5

BRIGANCE PRE-PRIMER READING PASSAGE

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Brigance Pre-Primer Reading Passage[1]

Little Cat said,
"I want to play.
I want to jump.
I can jump up and down.
I want Big Cat to play with me."
Big Cat did not want to play.

[1] Albert H. Brigance, Brigance Diagnostic Inventory of Early Development (Woburn, Mass.: Curriculum Associates, Inc., 1978), 214.

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APPENDIX 6

BRIGANCE PRIMER READING PASSAGE

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Brigance Primer Reading Passage[2]

Black Bear said, "I will
go out and get something
to eat.
I want something good to eat.
If I can not find something
to eat I will not be happy."
He found something good to eat
by the door of his home.
Black bear said, "After I eat,
I want to go back to bed.
I just want to sleep.
I just want to sleep all day."

---

[2]Albert H. Brigance, Brigance Diagnostic Inventory of Early Development (Woburn, Mass.: Curriculum Associates, Inc., 1978), 215.

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