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LISTENING COMPREHENSION: THE PREDICTION OF READING AND LANGUAGE ARTS ACHIEVEMENT IN THE LOWER ELEMENTARY GRADES

A Dissertation

Presented for the

Doctor of Education

Degree

The University of Tennessee, Knoxville

Frances Sharon Curd

August 1983

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DEDICATED TO

Lorraine Gentry Curd

and to the Memory of

Robert L. Curd

Dr. Paul C. Burns

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ABSTRACT

The major purpose of this study was to determine the usefulness and applicability of listening comprehension as a tool for predicting reading and language arts achievement in the lower elementary grades. Additional purposes centered on locating the reading and language arts components most related to listening comprehension and to determine if these correlations would remain stable over time.

The investigation was conducted at the second, third, and fourth grade levels of the Johnson County School System, Mountain City, Tennessee. The reading and language arts strands from parallel forms JS and KS of The Metropolitan Achievement Test-Survey Battery were administered to 102 students during November 1982 and February 1983. The statistical techniques chosen to complement the purposes and research questions were Stepwise Multiple Regression, Pearson-Product Correlation Analysis, the Paired Differences t-Test, and a Run's Test.

The findings relative to the major purpose indicated that listening comprehension was not the single best predictor of reading and language arts achievement. Other language arts and reading components emerged as more substantial predictor of achievement than listening. The findings relative to the additional purposes indicated that the correlations between listening and the individual

reading and language arts components did not remain stable over time. Further, punctuation, grammar, and study skills were the language components most related to listening comprehension. Inferential and literal specific comprehension were the reading components most related to listening comprehension.

The investigator concluded that a test of listening comprehension may not be viable for classroom use in predicting reading and language arts achievement. Further, the lack of stability in the correlational relationships may indicate that correlations should not be viewed as absolutes.

Further study might be concerned with the development of a listening test applicable for the lower elementary levels. Analysis of listening processes could possibly lead to an increased understanding of how lower elementary children perceive, assimilate, adapt, and apply linguistic constraints of language. Additional study of comprehension is needed to explore the commonalities of listening comprehension and reading comprehension.

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CHAPTER I

INTRODUCTION

The capacity to produce and respond to language is among man's most invaluable attributes for communication, self-development, and learning. Within the developmental progression of language acquisition, listening precedes and influences oral language production, reading, and writing. Listening provides the vocabulary, the sentence patterns, and the auditory discriminations that build a foundation for children to speak, read, spell, and compose (Burns & Broman, 1971). These linguistic skills founded upon listening are necessary for increasing language facility and for literate participation in this society. The proficient use of listening ability is a means for acquiring and assimilating information in both classroom and societal context.

The relevance of discerning listening has been recognized and emphasized by educators for all levels of instruction. However, the striking defect of education from kindergarten through college has been the failure to set up techniques and skills which result in disciplined listening (Neville, 1959). The investigations of Rankin (1926) and Wilt (1950) clearly established the pertinence of listening as a primary vehicle for learning and for social competence.

Elin (1972) concluded that the impact of listening in our daily lives demands that we in education place a greater emphasis upon this important language art. Although curriculum writers, instructional supervisors, and teachers have supported the premise that listening is a vital component of a language arts program, listening has been the most consistently neglected of the language arts (Dixon, 1964; Landry, 1969; Devine, 1978).

The neglect of listening has been attributed to factors such as time, teaching, and tradition (Landry, 1969). The traditional understanding of listening has dealt primarily with the physical reception of an auditory stimulus. Time constraints have limited the amount of instruction which can be devoted to listening in an overcrowded curriculum. Finally, teacher training programs and practices have been unable to find tenable solutions for the problematic issues which have surrounded listening such as appropriate instructional methods, types and sequence of skills, and measurement and evaluation. Sara Lundsteen (1979) has persistently maintained the critical importance of listening while conceding that very little is actually known about listening, appropriate instructional methods, or how to integrate this facet of oral communication with the other language arts. Although teacher training programs have advocated the inclusion of listening in direct language instruction,

listening has not been securely established as a vital, teachable communication component (Devine, 1978).

The attention focused on listening instruction has taken the form of games or oral language activities unrelated by a sequence of skills, consistent goals, planning, or evaluation. Brown (1967) investigated language arts textbooks and revealed that the emphasis given to listening was negligible. A set of assumptions outlined by Burns, Alexander, and Davis (1972) has illustrated the types of factors which have contributed to the curricular and instructional neglect of listening such as equating listening with hearing, viewing listening as a maturational process, and placing listening in a lesser position among the language arts. Along with misleading assumptions and traditional concepts, the acquisition of listening proficiency has been hampered by school imposed expectations. At the school and classrooms levels, listening has been seen as an extension of auditory abilities rather than a cognitive activity integrating thought and verbally transmitted symbols subject to existing knowledge and formative background experiences.

Wilt (1950) determined that approximately 56 percent of the student's day is spent in situations requiring focused, sustained listening. Within the classroom, the complexity of the listening task has been compounded by the necessity

for the student to acquire and adapt linguistic structures and elements while filtering out extraneous sounds and distractors. Teacher attitudes and opinions have added to the limitations placed on listening instruction. Many teachers have subscribed to the belief that listening ability parallels physical growth and development (Elin, 1972). Burns and Broman (1972) have held that hearing is the base of listening; however, listening extends through reaction, identification, and thought. Froese and Straw (1981) have determined that additional research is needed to refine and clarify what is presently known about the process of listening.

Statement of the Problem

Competence in listening ability is a requirement for academic achievement (Durrell, 1969). As a foundation for development and application of the language arts communication skills, listening has been connected to vocabulary, attention, factual recall, imaging, and thinking behaviors not requiring language symbols (Lundsteen, 1979). Listening has been termed the vehicle through which the raw material of the classroom must pass before learning can occur (Heilman, 1952). Gold (1981) proposed that instruction should be given in listening since listening skill establishes the basis for achievement in language arts. The

quality of listening experiences presented in the early elementary grades has direct bearing on learning results and on the formation of lasting study habits (Childers, 1963).

Durrell (1969) proposed that measures of a student's ability to listen would offer pertinent information in the planning of reading and language arts programs and also provide an estimation of language learning potential. Listening proficiency and listening comprehension have been the center of studies designed to examine the relationship of listening to reading and to the language arts to a lesser degree. Continued investigation of listening, listening processes, and language learning should lead to greater understanding of how children acquire, interpret, and apply linguistic structures.

Purpose of the Investigation

The major purpose of the investigation was to determine the usefulness and applicability of listening comprehension as a tool for predicting reading and language arts achievement at the lower elementary levels. A secondary purpose was to determine which reading and language arts components were most closely related to listening comprehension. An additional purpose was to investigate the stability of the correlations between listening and the reading and language arts components over an interval of three months. The investigation considered the following reserach questions:

1. What is the usefulness and applicability of the listening comprehension component of a standardized test as a predictive tool for determining reading and language arts achievement in the lower elementary grades?
2. What reading and language arts components have the highest degree of relationship to listening comprehension?
3. Did the reading and language arts scores from Form JS and Form KS remain stable or did significant differences occur between the dates of test administration?

Definition of Terms

The terms defined here have been used consistently through this investigation.

Auding. Auding is auditory processing with comprehension (Froese and Straw, 1918).

Auditory Acuity. This term refers to the reception of sound waves of various tones at various levels of loudness. Acuity also determines the degree of efficiency of the hearing organs (Lundsteen, 1979).

Auditory Discrimination. Auditory discrimination is the ability to hear likenesses and differences in the sounds of phonemes and words (Harris and Hodges, 1981).

Auditory Processing. Auditory processing is the entire means by which meaning is reached from spoken symbols (Froese and Straw, 1981).

Hearing. Hearing is the neurophysiological process dependent upon the normal functioning of the hearing organs (Froese and Straw, 1981).

Listening. Listening is a perceptual process which is preceded by the neurophysiological process of hearing. In addition, listening is perceptual learning through the auditory modality (Froese and Straw, 1981).

Listening Comprehension. Listening comprehension is the active process of apprehending meaning from spoken symbols.

Psycholinguistics. This is the interdisciplinary field of psychology and linguistics in which language behavior is examined (Harris & Hodges, 1981).

Reading. Reading is a complex process by which a reader reconstructs, to some degree, a message encoded by a writer in graphic language (Goodman, 1970).

Reliability. Reliability is the accuracy or precision with which a measure based on one sample of test tasks at one point in time represents performance based on a different point of time or both (Thorndike, 1969).

Validity. Validity is the effectiveness of the test in representing, describing, or predicting the attribute that the user is interested in (Thorndike, 1969).

Procedures

The available student population for this investigation was taken from the second, third, and fourth grades contained within the Shouns Elementary School located in Mountain City, Tennessee. The test group was composed of 102 students. The selection of the test group was based on parental response rather than upon a random sampling technique. The participants were divided among the grades numerically: thirty-three second grade students, thirty-three third grade students, and thirty-six fourth grade students. There was no attempt made to control the number of males and female participants. Each participant received a numerical code. All test materials were numbered to match to each participant's code. Names and codes were matched for the purpose of reporting the test results to the parents.

The test instrument was The Metropolitan Achievement-Survey Battery which included the Primary I, Primary II, and Elementary levels of Form JS and Form KS. Parallel forms of the test were used to: (1) provide two sets of raw score data for use in the regression analysis for predicting reading and language arts achievement, and (2) determine if the raw scores and the correlational relationships for the reading and language arts components would remain stable or change over a three month interval.

The reading and language arts strands of the test were administered during November 1982 and February 1983. The reading strand assessed vocabulary, literal, inferential, and evaluative comprehension. The language arts strand assessed listening, punctuation, usage, grammar, spelling, and study skills. Primary I level was used with the second grade participants. Primary II level was applicable for the third grade participants. The Elementary level was used with the fourth grade participants. The length of each testing session was two hours. Only the reading and language arts strands were given.

The language arts section of the test covered elements of the language arts curriculum devoted to communication skills in the form of listening, reading, and writing. The language arts components were represented by listening comprehension, spelling, grammar and syntax, mechanics, study skills, and capitalization and punctuation. The listening comprehension section was designed to measure syntactic relationships, concept formation, position and placement, following directions, negatives, specific detail, and sequence and order. Spelling, punctuation, capitalization, mechanics, usage, and other language elements have been recognized as tools for both receptive and productive communication, and the test items were designed for that purpose. The broad objectives of the test concerned the

student's ability to understand and use various language conventions in the process of communication.

The reading section of the test dealt with different levels of comprehension. The levels of difficulty in both reading passages and questions were reflected by the use of subjunctive mood, passive verbs, and embedded clauses. The Primary I level emphasized simple topics familiar to the beginning reader. These topics were presented in concise, clear language with stress given to literal comprehension. Primary II and the Elementary Level moved the student into more difficult material which emphasized inferential and evaluative comprehension. The reading comprehension objectives included the main idea, sequence, cause and effect, comparison and contrast, fact and fiction and determining the author's purpose.

Treatment of Data

The statistical analyses used in this investigation were selected to correspond to each research question. Research Question I necessitated the use of Stepwise Multiple Regression Analysis. In Stepwise Multiple Regression Analysis, the reading and language arts components were designated as either dependent or independent variables. The independent variables were combined to predict the dependent variable. Combinations of independent reading and

language arts components were manipulated to obtain the regression equations, the F values, and the R^2 coefficients necessary for the predictions. The listening component was designated as the constant independent variable and combined with reading and language arts components to locate the most significant set of predictors.

The Pearson-Product Moment Correlation Analysis was used to locate the reading and language arts components having the highest degree of relationship to listening comprehension. The term correlation was used to designate the degree of correspondence between two variables which tend to vary together increasing or decreasing as the variables increase or decrease (Roscoe, 1969). Correlation coefficients were ascribed to the relationship between the listening and the reading and lanaguage arts components. The coefficients ranged in value from -1 to +1 (Ferguson, 1981; Wyatt & Bridges, 1967).

Research Question III involved the use of a t-test to determine if the reading and language arts raw scores from Form JS and Form KS along with the correlational relationships remained stable or changed during the interim between the dates of test administration. The Paired Differences t-Test was used for each set of paired scores. A Run's Test was used to determine if the reading and langauge arts scores occurred in a random pattern or if a common element

such as an individual score was responsible for a given series of scores within the reading and language arts components.

Assumptions

The assumptions for this investigation were based on the following:

1. Listening comprehension can be measured by a standardized achievement test.
2. Reading comprehension can be measured by a standardized achievement test.
3. Each participant could hear.

Limitations

1. The participants were Caucasian.
2. The participants were predominantly rural within the middle to low income socioeconomic level.
3. The participants were obtained from an Appalachian population.
4. No formal instructional program in listening has been incorporated into the existing language arts curriculum.
5. The investigation was limited in generalizability of results based on the test participants.

6. The variables within the reading and language arts strands of the Metropolitan Achievement Test were characterized by common elements.

Organization of the Study

Chapter II contains a review of the literature concerning the development of listening research, models and processes of listening, listening instruction, the relationship of listening to reading, transfer of learning based on listening, and compressed and expanded speech.

Chapter III contains the description of the test instrument and a discussion of the reading and language arts strands from the Metropolitan Achievement Test-Survey Battery. The research procedures are detailed along with a discussion of the analysis of data.

Chapter VI reports the results of the investigation. Chapter V contains the summary of the investigation, the findings, conclusions, and recommendations.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Chapter II contains a review of the literature related to listening and listening comprehension. Specific attention has been directed toward the following topics: the historical development of listening research, current descriptive models of the listening process, the modification of listening behavior and ability, the relationship of listening and reading, and the rate of presentation.

The Research Perspective

Listening is an imperfectly understood process involving the active interaction of oral language and thought. Listening has received less curricular emphasis than the other language arts and reading, yet it is used to a greater extent than the communication skills of reading, writing, and speaking (Duker, 1969). Brown's (1967) analysis of language arts textbooks illustrated the limited attention given to planned listening instruction. Although over fifty years of research has demonstrated the importance of listening in the classroom, Kean (1982) found that listening is still not a generally accepted part of the standard curriculum.

Lundsteen (1979) defined listening as the process by which spoken language is converted to meaning in the mind. This particular interaction of language and cognition has not been thoroughly investigated. The entire listening process has not proven to be amenable to empirical study. After reviewing listening research, Kean (1982) reached the following determination concerning definitions of listening, vocabulary, and theories:

> Because listening is imperfectly understood, neither researchers not educators have as yet achieved common vocabulary or standard set of definitions that permits easy comparison of either theoretical viewpoints or research results. (p. 1102)

Listening has received attention in educational publications during the past fifty years (Devine, 1978). Position papers and articles in educational journal have consistently recognized the importance of listening in classroom activities and have noted the paucity of research (Petty, 1962). In comparison to listening, extensive research has been conducted in the other communication areas. However, sufficient research has been accumulated to form certain generalizations about listening which should be reflected in language arts programs (Devine, 1978).

The Historical Framework of Listening Research

Landry (1969) placed the beginning of listening research in 1917 in comparison to the appearance of reading

research in 1881. Landry and others have contended that listening research was formally initiated with the investigation of Erikson and King (1917) whose work was conducted in a teaching situation. However, the study of listening held a tentative position in psychological research conducted during the later decade of the nineteenth century. During the second decade of the present century, educators began to direct attention toward the serious investigation of listening (Toussaint, 1960).

Early Research

A set of psychological studies conducted during the late eighteen hundreds involving the study of memory and method of presenting material to be learned included listening variables. Munsterburg (1894), who was among the first researcher to incorporate listening, studied auditory and visual memory by presenting a set of stimulus numbers and letters in oral and visual situations. Although his investigation involved only a very small sample, Munsterburg concluded that the combination of oral and visual stimuli was the most effective method of presenting material to be learned. Kirkpatrick (1894) also investigated the role of listening in a study of recall. He presented a list of common nouns and adjectives orally and visually to his subjects. The visual presentation proved to be more effective than the oral method. Hawkins (1894) explored

auditory memory, visual memory, and a combination of the two. He concluded that auditory memory was stronger than visual memory in young children.

Bagley (1900) conducted a highly complex study of auditory perception concerned with the psychological principles of oral language which influence the efficiency of auditory perception. The purpose of his investigation was to examine aural comprehension within the broad context of auditory perception. Bagley considered the individual components of spoken language, the production of spoken language, language complexity, and cognitive processes such as association and recognition.

The study recognized by Landry (1969) and others as the beginning of formal listening research was conducted by Erikson and King (1917) within a classroom setting composed of a typical student sample. The strength of this study was its approximation of the teaching environment. Erikson and King designed the study to determine if a significant difference could be shown between two established methods of presenting lesson material. They compared visual presentation through silent reading to the oral presentation of the same material to students in grades three through nine. The test results indicated that the oral presentation was superior to the visual method. A similar study conducted by Russell (1928) found that at the fifth grade students

learned more from having material presented orally than presented visually through silent reading. Additional results indicated that at the seventh grade level, learning by listening and learning by reading were roughly equal. Finally, Russell concluded that at the ninth grade learning occurred more effectively through reading.

Kean (1982) placed the beginning of the serious study of listening in 1926 with the landmark investigation conducted by Rankin. Rankin's (1926) investigation of listening explored the amount of time individuals spent in communication activities. The study supplied evidence of the importance of oral language and in particular the ability to understand spoken language. Rankin constructed a test of listening ability for grades three through eight, and examined the relationship of listening and intelligence. Rankin determined that 41.1 percent of communication occurs through the medium of listening. Additional findings placed the degree of correlation between listening and reading at .48. Rankin advised schools to provide for the development of listening ability commensurate with its importance.

The study of oral, visual, and oral-visual methods of presenting lesson material and test questions continued into the 1930's. A study conducted by Jensen (1930) illustrated the types of investigations common to the early examination of listening. Jensen's study was implemented at the college

level and involved the visual and oral presentation of test statements delivered by the investigator. The oral method proved to be only slightly advantageous over the visual presentation. When students were given a choice of presentation method, the visual method was the most preferred.

The Progression of Listening Research

During the period extending from 1930 to 1940, listening began to be viewed as a separate skills area (Dixon, 1964). Dixon noted that one of the earliest publications devoted to listening was published by the National Council for Teachers of English in 1942. Researchers and educators noted the limited quantity and quality of listening studies during the middle to late 1940's in comparison to research in reading (Nichols, 1948). Nichols stated of seventy-one articles found in the literature on listening, one appeared before 1920; eight between 1920 and 1930; twenty between 1930 and 1940; forty-two between 1940-1947; and most significantly, thirty-four of the seventy-one articles appeared between 1943 and 1948.

By 1948 only three research reports in the field of listening had been published while over 3,000 studies had been published in reading (Landry, 1969). Nichols (1948) stated that only fourteen studies related to classroom listening comprehension were found and reviewed for his doctoral research with the earliest study dating 1917.

Nichols illustrated the lack of listening research by stating that the Encyclopedia of Educational Research reported that 1,951 scientific studies related to reading had been published in the United States and England by 1939.

In a review of listening research reported during the 1950's, Keller (1960) found that only a limited number of studies had been reported in The Knower Index of Graduate Theses in Speech. It was not until April, 1955, that the Review of Educational Research contained a listing of listening investigations; and, it was not until 1960 that the Encyclopedia of Educational Research mentioned the teaching and the testing of listening (Landry, 1969). Petty (1962) illustrated the limited concern with listening research by stating that the October, 1961, issue of Elementary English reported language arts research for 1960 and made no reference to listening. Petty continued his analysis of listening research by noting that the quantity of listening studies concerned with instruction in specific listening skills was reflected by the March, 1961, edition of Elementary English in which over two hundred research studies in progress were cited.

Scheyer (1971) stated that the first research involving elementary school students dated back more than fifty years. However, it was not until the 1950's that investigations were conducted concerning the modification of listening

ability through instruction. Nichols (1948), Petty (1962), Russell (1964), Duker (1969), and Devine (1978) consistently found that the field of education has begun to realize the importance of listening comprehension. In a review of doctoral dissertations on listening, Duker (1964) noted the increasing degree of depth of attention directed toward serious listening research. Doctoral dissertations and masters theses accounted for a substantial amount of this research. To illustrate the graduate upsurge in research, Duker (1963) enumerated the studies and reported that two theses were produced during the 1920's; five were written in the 1930's; eleven were written in the 1940's; and, eighty-eight were produced during the 1950's.

The landmark investigation conducted by Wilt (1950) demonstrated the critical importance of listening in the elementary classroom. Wilt's (1950) purposes were to determine what percentage of the school day elementary school children were expected to listen. Wilt also discovered whether teachers were actually aware of the amount of time which they expect children to listen. Within the context of teacher expectation, Wilt examined the relative importance teachers placed upon the four components of language education. The analysis of the data indicated that the total classroom time children were expected to listen amounted to 57.5 percent of the school day. Wilt found that children

were expected to spend more time in listening than in any other single school related activity. The teachers who participated in the study considered reading to be the single most important language art skill and estimated that children learn more through reading than through any other component of the language arts.

Contemporary Developments

Duker (1961) compiled an extensive bibliography containing 880 annotated research studies, theses, and dissertations which was later revised and amended. Duker (1964) concluded that listening was no longer considered merely a peripheral aspect of the communication process. The citations which Duker included in his bibliography indicated the growth of interest in listening as a promising area for study. The next substantial contribution to the listening literature was Duker's (1966) compilation of articles and position papers written by authorities on listening such as Fessenden, Rankin, Wilt, Toussaint, Moe, Nichols, Lundsteen, Duker, and Russell. These articles attempted to promulgate the importance of listening as a medium of learning and to build an acceptable theoretical framework for continued research.

Russell (1964) wrote that:

> Although the importance of listening is acknowledged at every educational level, the research

> attack on the existence and nature of listening ability and on ways of learning and improving it has been sporadic, atomistic, and inconclusive. (p. 262)

Neville (1969) considered the instructional aspects of language and concluded that listening has been the most difficult language art to teach and to learn. Both theory and research on listening have suggested the necessity for its instruction (Kean, 1982).

Brown's (1967) assessment of language arts textbooks determined that listening was emphasized in .63 percent of the lessons. Although the authors and publishers of these textbooks stressed the importance of oral communication, more text space and content were allocated to grammar, word usage, vocabulary improvement, and sentence study. Brown also discovered that listening was not emphasized as a distinct area for direct instruction. His analysis of listening lessons revealed that a common type of lesson began to emerge within the context of oral language. The typical listening lesson geared instruction toward the following goals: (1) courteous listening; (2) reasons for careful listening; and (3) preparation of the ears and the mind for attentive listening. Other types of listening activities involved listening to the radio and television and to stories. A limited number of lessons stressed listening for specific facts and listening for higher order relationships such as inferences, main ideas, and details.

Landry (1969) addressed the lack of attention given to listening within the language arts curriculum reaching conclusions similar to those of Brown's. Landry did find that listening programs were being developed which utilized tapes, records, and earphones. Russell and Russell (1959) published Listening Aids Through the Grades which contains extensive activities to stimulate listening ability. The book was designed for use in the primary, elementary, and intermediate grades. Listening Aids Through the Grades has been recently revised (1979) and has presented the classroom teacher with a variety of material relevant to listening skill pertinent to each grade level.

Dixon (1964) stated that as a subject for doctoral dissertations listening received attention during the 1940's and the 1950's. He concluded that the results gleaned from these studies were often confusing, conflicting, and even contradictory. Devine (1967) reported that the trend in listening research had been to reexamine previously studied topics and also to broach new avenues of inquiry leading to the evolution of a general theory of listening.

The Current Standing of Listening Research

Shubach (1975) produced a comprehensive bibliography of approximately 120 more current references to listening research and theory. This listing contained citations

concerning the instructional aspect of listening, measurement and assessment of listening, auding, listening and reading, listening processes, and notable dissertations. Newer lines of listening research have begun to examine metalinguistic awareness, metacognitive constructs, and the development and evaluation of listening programs.

Devine (1982) has published Listening Skills Schoolwide directed toward the classroom teacher but premised upon a sound theoretical base. Devine consistently advanced the concept of listening as a major avenue of learning in the elementary grades. In this publication, Devine stated that many of the operations involved in listening, especially higher-level kinds of listening, are mental operations. He indicated that current research is directed toward a fuller understanding of listening, intelligence, and cognitive processes.

Wolvin and Coakley (1979) advanced the direct teaching of listening in their volume, Listening Instruction. The content of Listening Instruction was based on types of listening such as comprehensive listening, discriminative listening, and critical listening. They commented concerning the lack of direct instruction that:

> There is a scarcity of readily available instructional materials containing real substance; many still assume that listening skills develop automatically or as by-products of instruction in other subjects; and there are only a few

> specialized listening courses in institutions of higher education. As a result of the neglect of listening training, both teachers and students find themselves inadequately prepared for a society that is shifting more and more from the eye and the printed page to the ear and the spoken word. (p. 1)

Their publication has been constructed to provide teachers with adaptable activities designed to build experiences with the various dimensions of listening which are interesting and motivational.

Listening Instruction

Educational Implications

Many of the studies conducted in listening since the 1940's have investigated the possibility and effectiveness of listening instruction (Devine, 1978). Devine contended that listening skill or ability can be modified and improved through consistent, direct instruction. Devine (1982) reasoned that listening has not been taught in schools because it has not been carefully characterized and defined. Wolvin and Coakley (1979) proposed that listening has continued to be the main channel of classroom instruction. Arrasijid (1973) found that listening is a significant medium of learning at all stages of education, but especially at the elementary levels. Although listening has seldom been taught formally, researchers and educators have been aware that more time is spent in listening than in any

other communication mode (Devine, 1967). Landry (1969) asserted that children do have potential for listening and training is necessary to develop that potential. Research has demonstrated that listening can be identified, measured, and taught (Griffin and Hannah, 1960). The primary hypothesis stated in the investigation of the instructional aspects of listening identified listening as a modifiable behavior or quantity amenable to change and improvement.

The Modification of Listening Ability

Lundsteen (1964), Fawcett (1966), Pratt (1956), Canfield (1961), Brown (1954), Hollow (1955), Kellogg (1966), Desousa (1967), Penfield and Marascuilo (1972), and Kraner (1963) demonstrated that listening can be taught. Research in listening instruction has been typified by types of methodology, use of specific programs, and the introduction of certain listening skills such as critical listening.

Lundsteen (1964) investigated the instructional aspects of critical listening with a sample of 300 fifth and sixth grade students. Lundsteen developed lessons in critical listening concerning the speaker's purpose, identification of propaganda, and analysis and judgment of strong and weak arguments. The analysis of data indicated that instruction improved critical listening ability at the .01 level of significance. The study demonstrated that appropriate experiences and materials did significantly improve the

critical listening dimension. A major implication from the Lundsteen study was the need for the development and implementation of listening instruction at the intermediate grade level.

Canfield (1961) explored methods of teaching listening in an attempt to identify the most effective strategy for classroom implementation. Canfield chose direct and indirect teaching styles for the elementary grades. His analysis indicated that both types of instructional strategies were equally effective methods for the elementary classroom. Pratt (1956) recognized the need for an instructional program designed to improve listening ability. The resulting evaluation of his listening material led Pratt to conclude that listening can be improved through direct instruction; and that instruction may be more effective with certain listening skills. The results of this investigation implied that listening may not be a unitary process.

Materials and programs such as The Listen and Read Program were used to compare audiovisual teaching methods with teacher-initiated instruction. Kraner (1963) compared these two methods of listening instruction at the eighth grade level. Taped lessons taken from the Listen and Read Program were administered to the test group. The experimental group showed significant gains at the .05 level in following directions, recognizing transitions, word

meanings, lecture comprehension, and total listening. Recorded presentations proved to be as effective as teacher presented instruction.

Listening instruction has been incorporated with the study of children's literature for the primary grades. Kellog (1966) designed an instructional listening model which he implemented in the first grade. The model was integrated with a literature program and tested with a sample group of 822 students. The subsequent study was designed to analyze the effect of a listening instruction model on both listening and reading ability. During the study, Kellog found that listening was inextricably linked with thinking. There were positive gains in both the traditional group and the language experience group for boys and for girls. Kellog found significant gains in listening and reading achievement.

Fawcett (1966) examined the effectiveness of teaching listening skills to fourth, fifth, and sixth grade students. The relationship of listening to other school related variables such as achievement and intelligence were incorporated in the study. An experimental group of 322 students were given listening instruction through teacher and tape presented lessons. Fawcett reported a correlation between listening and total language scores of .540; a correlation of .098 was obtained between listening ability

and sex. A correlation of .585 was found to exist between listening and reading comprehension, and a correlation of .451 was found for listening and mental age. Fawcett concluded that listening instruction did result in significant improvement in listening scores; and, listening is positively related to several other curricular areas such as reading, language, and arithmetic.

Research in listening instruction has taken place at the college level, particularly with freshmen students. Griffin and Hannah (1960) designed a brief instructional unit in listening for a college freshman speech class. The instructional unit consisted of a lecture, a motivating test, and a discussion of listening problems and theory. Analysis of pretest and posttest scores indicated gains in listening ability. Earlier, Erickson (1954) conducted an experiment with college freshmen to determine if listening instruction at that educational level would result in improved listening ability. The treatment consisted of lectures in how to listen. Erickson also found positive gains in listening ability.

Brown (1954) questioned the plausibility of teaching listening. His investigation at the college level was comprised of two studies, one concerning listening and the other dealing only with reading. Direct instruction in reading and in listening proved effective for increasing

skills. Brown concluded that in general, students who listen better than they read have more room for improvement than those who read better than they listen. He proposed that listening scores might play a major role in identifying problem cases in both reading and listening ability.

The research of the 1950's and the 1960's consistently indicated that listening is teachable. The studies by Hollow (1955) and Trivette (1961) are examples of the work done during these two decades. Sister Mary Hollow (1955) questioned whether a planned program of listening instruction would improve the listening abilities of intermediate grade students. Hollow designed listening lessons and tests and trained students for six weeks. She reported a positive correlation at the .01 level between listening and language arts achievement with coefficients of .55 for reading and .36 for total language. Hollow concluded that planned, systematic instruction in listening did result in positive gains.

Trivette (1961) sought to determine if training in listening for main ideas, details, and inferences would increase the student's ability to listen for these same purposes. Trivette stated that training for these higher order processes could be found in reading programs. She found that no definite training in listening could be said for contemporary language arts programs. When specific

listening comprehension skills such as main ideas, details, and inferences improved, other comprehension skills such as apprehending word meanings and following directions also tended to improve.

Instructional Models and Listening Skills

More recent research has focused on identifying specific listening skills comparable to already recognized reading comprehension skills and toward the development of comprehension improvement strategies based on Bloom's hierarchy. Penfield and Marascuilo (1972) isolated eleven basic skills involved in effective listening for analytical study. Training in these eleven skills was provided for students in grades two and five. Socioeconomic factors and sex differentials were two additional variables included in the primary investigation. Students listened to taped lessons composed of:

1. Identifying mood
2. Inferring connotative word meanings
3. Sequencing ideas
4. Giving details
5. Stating main ideas
6. Predicting sequence and thought
7. Inferring the speaker's purpose
8. Applying standards to judge persuasion
9. Judging main ideas from specifics
10. Judging logical validity
11. Identifying sequence ambiguities. (p. 221)

Training in listening was found to be highly effective at grade two and only moderately effective at grade five. A

significant finding was that whereas socioeconomic status was not a pertinent factor at grade two by grade five, there was a distinct change in performance favoring the students in the higher socioeconomic levels. Further results indicted that training in listening skills narrowed the gap between socioeconomic factors at the fifth grade level.

Crowell and Au (1979) asserted that if listening comprehension is to increase, listening must be directed to assist the student in becoming an active processor of story information. They devised a model of story comprehension based on an ordering of questions along a scale from easiest to most difficult. The sample consisted of kindergarten and second grade students. After a story was read orally, questions representing the five levels of comprehension were asked. The results indicated that a scale of questions can guide teachers in diagnosing the levels of comprehension attained by each student. Crowell and Au proposed that following an ordered progression of listening comprehension questions can assist teachers in guiding the higher cognitive processes of students.

Research spanning thirty years has indicated that listening can be taught at most educational levels (Devine, 1978; Kean, 1982). Programs, materials, and instructional methods have been tested and found to be contributing factors in increasing listening ability. According to Kean

(1982), other factors contingent to listening instruction include interest, motivation, the environment, fatigue, emotional reactions, verbal redundancy, and the concreteness of the stimuli.

Listening Models and Processes

Introduction

Lundsteen (1979) argued that listening is a complex process and that listening skills have largely been passed over in the elementary curriculum. Numerous attempts have been made to explain the complexity of listening processes. The listening process has been broken down into three stages (Kean, 1982). According to Kean, the first stage of the auditory process involves hearing oral language during which sounds are received and modified by the ear. The second stage has been specifically designated as listening involving the identification of component sounds and sound sequences so that words are recognizable. The final stage called auding, has been theorized as the merging of language meaning and cognition.

The Lundsteen Model

The listening models proposed by Lundsteen (1979), Friedman (1978), Wolvin and Coakley (1979), and Sticht et al. (1974) have typified the current state of theoretical and research models as well as models designed for the

classroom teacher. Lundsteen (1979) has been responsible for the most thorough and detailed analysis of all available listening data to date (Kean, 1982). Lundsteen has concerned her work with teaching critical listening, analyzing proficient listening, and developing a listening taxonomy. The taxonomy extends from the initial stages of auditory memory to critical and evaluative listening behaviors. Objectives for general listening and critical listening have both been incorporated in the taxonomy. Lundsteen offered psycholinguists and educators a framework for the analysis of egocentric and nonegocentric speaking and listening behaviors. Speaking of the communication processes between a speaker and a listener, Lundsteen identified the egocentric speaker as one who encodes information internally to be only personally relevant while producing language which has not been modified to fit the experiences and linguistic capacity of the listener. Keyes (1975) examined egocentricism in communication tasks with groups of kindergarten, second, fourth, and seventh grade students. The study was based on the theory that communication failure in young children is attributable to cognitive egocentrism. Keyes found that listeners actively contribute to the success of a communication problem by compensating for inadequate messages and that there is a progression in the development of this ability.

In Listening: Its Impact at all Levels on Reading and the Other Language Arts, Lundsteen (1979) enumerated the characteristics of listening, compared listening to each language arts, described proficient listening, and presented a limited listening model for classroom use. Lundsteen (1979) stated that listening is composed of five basic components consisting of previous knowledge, listening material, physiological activity, attention, and conscious intellectual activity. Lundsteen cautioned that listening, like reading, is more than a sum of isolated skills built upon each other. In a description of proficient listening, Lundsteen considered the contributing factors of physiological activity, psychological attentiveness, and cognition in the ten steps followed by the able listener represented by:

1. Hearing
2. Holding in memory
3. Attending
4. Forming images
5. Searching the past store of ideas
6. Comparing
7. Testing the cues
8. Recoding
9. Getting meaning
10. Intellectualizing beyond the listening moment. (p. 47)

Lundsteen's ten steps display the interaction of oral language, decoding strategies, cognitive focus, hypothesis testing, and finally, comprehension.

Lundsteen compartmentalized these ten steps into three larger sections with each step having specific functions and

characterized by specific processes. The first section of the model is identified as responding to and organizing the oral material through discriminating sound, sorting, sequencing, focusing attention, imaging, testing cues, and matching language units. Section two is composed of getting meaning and intellectualizing implying the grasp of literal comprehension and application of experiences in order to form a linguistic response. Referring to section three, Lundsteen stated that after listeners have accurately received and understood the message, productive thought and response exceed the event. Cognitive activity stemming from the listening event may take the form higher level comprehension, sophisticated interpretations, and emotional experience.

Lundsteen commented that the model is not technically precise; the components have not been arranged sequentiallly, nor were they designed to be independent of each other. The model was constructed to facilitate curriculum and instructional planning. Lundsteen commented that listening is not a set of isolated skills; therefore, teachers should apply caution in listening skill development. Speaking of the entire listening process, Lundsteen stated that:

> The components have been clarified as follows: listening as distinguished from physiological hearing and from attention; process as made up of

> steps; spoken language as having various dimensions in material; meaning as residing in the users; and the mind as capable of intellectualizing far beyond the received message. (p. 48)

The Friedman Model

Friedman (1978) posed a nine stage model of listening illustrated by a two dimensions grid which mobilizes cognitive and affective factors. Friedman stated that listening is more than the physiological process of hearing. He premised that listening is a set of internal cognitive interactions such as selection, organization, comprehension, interpretation, and evaluation which act to decode the perceived message. In stage one, Friedman contended that the key element is attentiveness, e.g., maintaining an external sustained focus on the speaker. Within the middle stages, Friedman proposed that the listener is actively selecting and organizing the verbal stimuli in a common process recognized as understanding. At stage nine, Friedman placed the listener in the evaluative position of judging and weighing the message. Friedman theorized that these three stages can be viewed as occurring sequentially, cumulatively, and often almost concurrently in the on-going process of communication. He used such terms as attentiveness, understanding, and evaluation to summarize how listening takes places. The content component was used to encompass the cognitive domain which subsumes the other

components. The second component concerned the affective dimension of personal reaction such as likes and dislikes. The final component represented personal responses to the aesthetic impact of the message expressed through the arts.

The Wolvin and Coakley Model

A third type of model involves the decoding of verbal stimuli. Wolvin and Coakley (1979) constructed a graphically simple model to explain the theoretical progression from oral language to cognition. Like Lundsteen and Friedman, Wolvin and Coakley placed the reception of aural stimuli in the model's initial position. They identified a component labeled attending and used it to explain the exclusivity of focus on a selected stimulus. This component stresses the deliberate activity of the listener in attending to a particular stimulus. Wolvin and Coakley made a distinction between reception of the aural stimulus and listening. The third component of the model was used to demonstrate that during the act of listening meaning is assigned to the aural stimulus. Wolvin and Coakley stated:

> We do not know how meaning is assigned, but some researchers suggest that it is done by mental categorization. Categories developed as we acquire language are stored in the memory. After selecting an aural stimulus for attention, an individual searches through the thousands of categories and subcategories in his memory system to find the one into which the stimulus fits. (p. 3)

The final component in the model concerns the process Wolvin and Coakley labeled remembering which refers to the storage of aural stimuli in the mind for the purpose of recall. Wolvin and Coakley allowed that their model of listening is a straight forward sequence which describes only the decoding aspect of listening.

The Sticht, Beck, and Hauke Model

Sticht, Beck, and Hauke (1974) developed an extensive theoretical base for their model of auding and reading which presents listening as the predecessor of languaging. They divided their schematic model into developmental stages illustrating the sequence of language acquisition as that process is influenced by the environment and the emergence of and growth of cognitive structures. Sticht et al. placed adaptation as the integral component of the model expressed as basic adaptive processes that encompass the physical senses and cognitive ability. Sticht, Beck, and Hauke also made a distinction between the aural reception of hearing and the greater complexity of listening; and, this distinction is fundamental to the model. They described listening as an information processing activity dependent upon the nurture of sensory-perceptual cognitive-motor development and the integration of these functions all of which can be controlled by the individual. Sticht, Beck, and Hauke observed that the child begins to use the

processes of listening and uttering for languaging behaviors in the initial step of auding. They stated that when a child uses listening processes directed toward the production of speech, then the basis for verbal language comprehension begins leading to a specialized dimension of listening called auding. Their term, languaging, was used to refer to language conveyed by speech, print, or signs in conjunction with comprehension. Auding was used to designate the joint occurrence of listening and languaging processes. The Sticht, Beck, and Hauke model illustrated how sound, syntactical features, and deep structure are conjoined with memory, experience, and conceptual structures to become language processing.

The Listening and Reading Relationship

Listening is a receptive linguistic process closely related to reading. This relationship has been well established by research (Mead, 1978). Certain analogous features characterize listening and reading processes such as analyzing linguistic structures and comprehensing semantic content. Bradtmueller (1978) analyzed the commonalities and the differences between the two modalities. Each occurs first with the reception of a stimulus contained within the individual's perceptual field. The stimulus, whether aural or visual, proceeds through an

internal process involving decoding, scanning memory stores, recoding, attaching meaning to the stimulus, being put into context for assimilation, and finally peaking with comprehension.

Plattor (1969) found that apparent distinctions between listening and reading occur within their commonalities. In reading, the individual has time to analyze the unknown words through contextual clues, word analysis skills, and dictionaries. Print is fixed and stable, therefore, the reader is able to control the reception speed, use visual cues such as capitalization and punctuation, and reread at will. The listener is dependent upon the temporal flow of oral language and upon the speaker's organization ability and linguistic competence. The rate of reception cannot be controlled and poorly developed auditory perception and discrimination skills may inhibit the identification of words. The listener can make use of gestures, facial expressions, voice inflections, and the conversational nature of much communication.

Studies have been conducted comparing and contrasting reading and listening relationships with particular emphasis directed toward establishing the supremacy of one modality over the other as a channel of learning (Massaro, 1977). More recent research has explored information processing, the semantic and syntactic constraints of oral and printed

language, underlying cognitive ability, and the nature of comprehension.

Hollingsworth (1968) wrote that listening and reading involve about the same mental processes. Lundsteen (1979) stated that listening and reading employ common skills of thinking and understanding. She maintained that:

> Listening and reading make use of many of the same feelings, background experiences, concepts, and thought strategies. Processes that go beyond the mere physical acts of seeing and hearing are similar. (pp. 3-4)

Lundsteen continued that the physical reception and translation of sounds into meaning through listening is different from that of reading. The listener must deal with noises that mask the message, deal with fatigue, concentrate on a flow of auditory stimuli, and consciously call up past auditory background to aid in recoding sound to language. Lundsteen further stated that the student who has difficulty understanding printed language may also lack understanding in the realm of spoken language. Mosenthal (1976-1977) advanced the concept of an underlying linguistic competence in the processing of print through silent reading and through oral language. Plattor (1969) found that critical thinking is common to both listening and reading. She listed the following skills as thinking skills which in turn indicate that commonalities in listening and reading comprehension do exist:

1. Recall of word meaning
2. Use of context clues
3. Noting detail
4. Organizing content into main and subordinate ideas
5. Selecting and identifying pertinent information
6. Recognizing purpose
7. Distinguishing fact and opinion
8. Drawing conclusions
9. Predicting outcomes. (p. 4)

Devine (1968) noted the likenesses of listening and reading stating that both are the intake channels of communication; each seems to be a complex of related skill components; listening and reading test scores are highly correlated; instruction in one modality seems to affect the other; and each involve higher mental processes. Divine (1976) reexamined the reading and listening relationship with deference given to cognitive factors. Devine hypothesized that in reading, and to an extent in listening, all instruction beyond the decoding stage is really training in how to think. He continued his analysis of the relationship commenting that reading and listening comprehension have acquired the same terminology for the designation of comparable skills.

From the theoretical perspective of comprehension reading and listening behaviors appear to stem from the same cognitive base. Lundsteen (1979) acknowledged a level of listening in her model which she identified as intellectualizing. Devine (1978) stated:

> There are probably a variety of identifiable higher-mental processes behind listening and reading skills, and these reading and listening skills are probably reflections of these higher-mental processes at work. (p. 9)

He continued by noting that when teachers offer instruction in specific reading and listening skills, they are probably developing the student's ability to use these higher-mental processes. Devine asserted that if reading and listening skills are recognized as language reflections of specific thinking processes, then it may be possible to construct a reading-language arts program extending from the primary level through high school which would actually foster effective thinking.

The Role of Comprehension

The research done on the relationship of listening and reading has considered the nature of comprehension as a global function, a set of processes, and as modality specific. Hampleman (1958), Swalm (1972), Brassard (1970), Kintsch nd Kominsky (1977), Hildyard (1978), Mosenthal (1976-77), and Heerman and Al-Dahiry (1981) directed study toward metacognition, effectiveness of learning through these two modalities, the relationship of age, sex, and text difficulty to comprehension, and structuralization of the message.

Larsen and Feder (1940) were among the first to address the differences and commonalities in listening and reading

comprehension. In a study to differentiate between certain phychological abilities involved in reading and listening comprehension, Larsen and Feder tested college freshmen. They reported a correlation coefficient of .82 between the listening and reading data. A definite tendency was shown for more able readers to comprehend better when reading than when listening. Text difficulty was also found to be a contributing factor in comprehension. As text difficulty increased, reading proved to be the superior modality. On easy material, less able students performed slightly better in listening and performed with equal comprehension of difficult material through either reading or listening. Larsen and Feder reached the conclusion that comprehension is a centrally determined function operating independently of the mode of presentation. This conclusion has been widely accepted and generalized. Downing and Leong (1982) found that research has indicated that poor readers possess significantly higher auding ability; good readers have a reading-auding gap not significantly different from zero.

Hampleman (1958) studied the listening and reading comprehension of intermediate grade students utilizing such variables as chronological age, sex, and difficulty of the materials. After presenting the same material in reading and listening situations followed by comprehension questions, Hampleman concluded that older students scored

higher in both listening and reading comprehension. Listening comprehension tended to be higher than reading comprehension for both sets of students. From these results, Hampleman recommended an increase in oral presentation with intermediate level elementary students.

Brassard (1970) conducted an investigation similar to that of Hampleman. This study was designed to draw direct comparisons among listening, reading, intelligence, grade level, and sex. The test materials were administered during silent reading and listening. Results showed that listening comprehension was higher than reading comprehension. The outstanding difference between the two modalities occurred in the fourth grade. Brassard concluded that mental abilities tests based on reading comprehension do not yield an accurate assessment of either mental ability or reading potential.

Swalm (1972) approached the study of listening and reading by including oral reading as a modality distinct from silent reading. Listening, silent reading, and oral reading were compared for comprehension effectiveness at the second, third, and fourth grade levels. Swalm's data indicated that above average readers tended to comprehend better when reading silently. Reading orally and listening were more effective when reading ability was below average. Swalm concluded that the readability of the lesson material was a deciding factor in general comprehension.

The nature of the text and lesson materials have been considered in studies similar to those of Swalm and Larsen and Feder (1940). Kintsch and Kominsky (1977) compared listening and reading from the perspective of story summarization. They hypothesized that listening is a highly overlearned process and that performance on comprehension tasks after listening to a text should provide a pure reflection of comprehension. The college students participating in the study either read silently or listened to the text material. Following the presentation, each student wrote a 60 to 80 page summary. The summaries were analyzed for content, and the differences between listening and reading comprehension proved to be negligible.

Hildyard (1978) carried the study of listening and reading comprehension into the analysis of the differences in oral and written language. Students at the third, fourth, and fifth grades were asked to recall narrative information. Listeners recalled structural information, general meaning, and made more errors on incidental information. Readers were more aware of what was said and recalled more nonrelevant information. Hildyard found that listeners understand the narrative theme and the author's intended meaning. Readers demonstrated a greater ability to understand and remember explicit statements. Heerman and Al-Dahiry (1981) found that students can answer literal and

inferential comprehension questions equally well in listening, silent reading, and oral reading.

Sticht (1972) argued that comprehension is a global or unitary function in the understanding of language produced either through speech or in print. Sticht (1972) presented one view of the reading-listening relationship by advancing the theory that there is a single wholistic ability to understand language. Sticht stated:

> There is only one, wholistic ability by language, and one should be able to comprehend equally well by listening or by reading, if one has been taught to decode well and other task variables are equalized. (p. 293)

Linguistic Processing

Mosenthal (1976-77) considered the Sticht theory in his investigation of metacognitive strategies employed in formal and informal situations during listening, silent reading, and oral reading. Mosenthal tested the hypothesis that individuals tend to reproduce the literal message of language during formal situations, and that the message tends to be reconstructed inferentially within informal contexts. A sample of 20 third and 20 sixth grade students were placed in formal and informal settings while engaged in listening, silent reading, and oral reading. The sixth grade students did support the Mosenthal position for oral and silent reading in formal and informal setting. There was no significant differences shown between reconstruction

and reproduction within listening. Mosenthal concluded that the sixth grade students fully employed metacognitive strategies to comprehend wholistically in both reproducing and reconstructing language during formal and informal situations. Mosenthal determined that the differences between third grade students' reproductive and reconstructive language abilities appeared to be a function of the mode of processing. The sixth grade students reconstruction and reproduction responses appeared to be more a function of the situational context in which the language was being processed.

Listening-reading research has been approached from the perspective of information processing, memory factors, the transfer of learning, and the learning effectiveness of integrated listening-reading language programs. Walker (1974-75), Guthrie and Tyler (1976), Berger and Perfetti (1977), and Evans (1978) examined the reception and interpretation of linguistic structures, the attributes of good and poor readers in listening and reading contexts, and the role of memory for each modality.

Walker (1974-75) contrasted the processing of language through reading and listening through the theory that the receptive natures of each modality are subsets of a more global behavior, language processing as the reception and interpretation of linguistic messages. Two sets of

contrastive stimuli in the form of temporal speech and formal prose were the basis of the study. Channel and linguistic differences were predicted to affect message reconstruction. Walker tested the hypothesis that readers would consistently be able to display greater ability in reconstructing linguistic information. Significant differences favored the reading group. A higher proportion of listeners recalled ideas not directly comparable to explicitly stated ideas. Walker concluded that this finding indicated that differences in reading and listening were attributable to processing factors in terms of cues and message reconstruction.

Guthrie and Tyler (1976) premised that speech and print are two inroads to the same language processor. Their study of language processing in reading and listening considered the following:

1. Whether comprehension deficiencies of poor readers are present for both spoken and written language.
2. Whether the deficits are more pronounced for semantic or syntactic processing of sentences.
3. Whether the lack of automaticity in decoding can account for poor reading comprehension.
4. Whether incomplete decoding accounts for the performance of poor readers. (p. 416)

The sample of students was composed of fourth graders identified as either learning disabled or as average readers at grade level. Word strings were obtained from the Dale-Chall list and were categorized as meaningful,

anomalous, and random. The anomalous word strings were syntactically correct but violated semantic principles. The random word strings violated rules of syntax and semantics. The word strings were presented to each group in listening and reading settings. Comparison of meaningful and anomalous strings allowed for the examination of semantic processing. Syntactical processing was examined by comparing meaningful and random word string arrangements. Results indicated that the meaningful word string was the most readily processed followed by the anomalous and finally, the random string. Poor readers were significantly worse in reading than in listening. Good readers were found to be equally proficient in each modality. Further findings suggested that the failure of some students to comprehend written language cannot be totally attributed to a failure to comprehend spoken language.

In a study of language processing, Berger and Perfetti (1977) found that less able readers generally have a reduced ability to comprehend language. Their findings were based on memory for oral and written language with test groups designated as skilled and unskilled readers. Paraphrase recall and verbatim comprehension questions followed the two types of presentation. Able readers performed equally well in both listening and reading.

Using Caucasian and Spanish-American elementary students, Evans (1978) added variables such as the characteristics of the learners, structure of the message, and conditions of the learning situation to listening and reading. Evans investigated the language comprehension of these students and the factors which affected their acquisition of knowledge from connected discourse. She concluded that the older, more able students recalled more information and that boys performed better than girls. Evans proposed that written and aural comprehension comprise a singular language comprehension process even though modes of presentation differ. Evans's last conclusion would be in agreement with the theory of reading and auding proposed earlier by Sticht (1972).

Students often have difficulty in learning new material presented in textbooks (Schaller, 1979). Reading, like listening, is a major channel for the acquisition of knowledge. Schaller found that a prevalent view of reading equates it with listening with the added step of decoding print to speech. Major research has focused on the transfer of learning or knowledge across modalities (Schneeburg, 1977; Hollingsworth, 1964; Bursuk, 1971; Many, 1965; Reddin, 1968; Swalm, 1974).

Transfer of Learning

Hollingsworth (1964) examined the direct transfer of increased listening ability to reading achievement. To test his hypothesis, Hollingsworth compared the effects of the SRA Listening Skill Program and the ESL Listening Program as means of increasing listening comprehension and reading achievement. Nineteen classes of eighth grade students received direct instruction in listening skills extracted from these two commercial programs. After the data analysis, Hollingsworth found no significant achievement in reading. No significant differences were demonstrated for the attempt to increase listening ability.

Reddin (1968) hypothesized that listening instruction would have a positive effect upon the development of reading skills and critical thinking. Reddin presented a series of multidisciplinary lessons in listening followed by reading tests and tests of critical thinking. The results revealed that instruction in listening skills was not effective in improving skill in reading for the main idea; nor was the instruction effective in improving critical thinking skills. Reddin noted that such instruction did appear to be effective for some students in reading for details.

Bursuk (1971) based her study of reading and listening upon the hypothesis that below average readers would benefit from an instructional approach combining aural and visual

stimuli in remediation programs. She investigated the effectiveness of correlated reading-listening lessons compared to reading only lessons. When modality preference was not a variable, the combined presentation was found to be the more effective mode. Bursuk concluded that oral communication processes had a facilitating effect upon reading instruction.

Schneeburg (1977) embarked on a four year study to test the efficacy of a combined listening and reading program designed for the primary grades. The global objective was to expose students to a great variety of language in print and in oral form. Instruction methods for accomplishing this objective featured exposure to oral reading, taped stories, choral reading, echo reading, and listening centers. Results indicated a substantial increase in the fourth grade percentile rank. The most significant gains were made in comprehension measured by the California Achievement Test. Over the four year period, the below average group consistently showed improved scores.

Methods of Presentation

Schaller (1979) advanced the position that teachers discourse is easier to understand than textbook style language. Schaller based the rationale for this position on the nature of linguistic information presented through listening and reading. Prior knowledge, reading skill, and

text difficulty were contributing factors to the general difficulty in reliance on textbooks as primary sources of information. Schaller wrote that teachers tended to clarify and emphasize major points through repetition and reviews. From classroom observation and analysis of textbooks, Schaller identified four general advantages that teacher produced language has over textbooks. Tailoring the message refers to teachers adaptation of their language and presentations to the ability and the experiences of the students. Activating prior knowledge refers to reminding students of information relevant to the lesson. Focusing attention involves motivation and interest and the focus of attention on specific information. Finally comprehension monitoring forms the evaluative stage in which teachers determine the level of the students' understanding.

Many (1965) and Swalm (1974) compared the aural and visual modes of presentation to determine the effectiveness of each as a means of presenting information for learning in the primary and intermediate grades. Many postulated that no significant differences would emerge between listening and reading. He tested 352 students in listening and reading situations. A significant difference at the .01 percent favored the visual mode of presentation. Many found that students who scored high in one mode also scored high in the other mode. The converse was also true for

those students making low scores. Many concluded that a high positive relationship exists between listening and reading.

Swalm (1974) based his study on the accepted theory that reading supercedes listening as the primary route of learning in the middle elementary grades. Swalm hypothesized that the students' reading ability along with text difficulty might be contingent factors. The reading treatment concerned the silent reading of stories selected on the basis of readability, interest, and content information. The stories were followed by a cloze comprehension test. The listening group heard the same stories through taped presentation and took the cloze comprehension test aurally. Swalm found that no significant differences between listening and reading could be found at any grade level. Other results indicated that above average readers in all grade levels showed a marked tendency to comprehend better when reading than when listening. Below average readers at each grade level tended to perform better on listening. Swalm concluded that both methods of learning should be used in elementary classrooms.

Although listening research has accepted the idea that listening can be taught, actual curriculum practice assumes listening to be an inborn or naturally acquired trait (Gratz, 1973). In the development of listening research

through the previous three decades, studies have demonstrated the importance of listening as a primary channel of learning. Listening and reading have been researched as parallel processes with attention given to determining the more effective mode for learning. More current study has included the nature and characteristics of oral and written language within the context of semantics and syntax and general language processing. Comprehension factors in reading and listening comprise a body of research surrounding comprehension as the wholistic process for understanding any type of language and comprehension as a set of interrelated skills.

Studies using commercially produced programs for integrated listening and reading programs have demonstrated that the two modalities are related and tend to influence each other to an extent. Variables such as age, grade level, sex, reading ability, memory, and text difficulty have been the basis for somewhat contradictory results in the comparison of listening and reading. Research results have indicated that integrated listening and reading programs have produced measurable gains in the average and below average reader. The literature on the parallelism of reading and listening have consistently demonstrated a positive relationship.

Compressed Speech

Introduction

The study of compressed speech represents an area of listening research in which oral language is produced mechanically at varied speeds beyond average rate of production. The normal rate of speech production is approximately 175 words per minute; in theory, the brain can process linguistic information at a more rapid rate resulting in a gap between actual comprehension and higher mental processes (Woodcock and Clark, 1968). The study of time-compressed speech has numerous implications for the classroom regarding information-processing, reading and listening comprehension, and learning.

Historical Foundation

Research in compressed speech is not a new dimension of listening. Goldstein (1940) brought the study of rate controlled speech to the examination of listening and reading comprehension. Goldstein's research technique involved the use of oral and visual presentations. The visual presentation consisted of a motion picture projection of meaningful print upon a screen, while the auditory presentation consisted of the identical material given in phonographic form. Goldstein controlled the reading and listening rates at 100, 137, 174, 211, 248, 285, and 322

words per minute. He reported that the superiority of listening over reading comprehension diminished with increasing difficulty of the material. Auditory presentations were more effective with easier material. At increased rates, listening and reading comprehension declined rapidly. In listening and reading, the more intelligent subjects scored relatively higher in each modality. Goldstein concluded that reading is apparently a central or general language process rather than a peripheral activity.

In a review of time-compressed speech, Orr (1968) found that research reports have maintained that some degree of accelerated speech is intelligible and comprehensible. Orr stated that learning can occur when material is presented at faster speeds, and that retention is not adversely affected under accelerated conditions.

Compressed Speech and Contingent Variables

Sticht (1968) compared intelligence, reading ability, and listening ability using normal and time-compressed speech with adult, male, armed services personnel having low, average, and high mental aptitudes. Sticht used a phonetically balanced word list presented at compression ratios of 0, 36, 53, and 59 percent. No word was presented twice. After being tested for listening and reading

comprehension, the subjects were instructed to write down each word as they heard it stated over a loudspeaker. Sticht noted that in performing such basic tasks as discriminating simple, very familiar words, and reproducing those words, there was a difference in performance due to aptitude.

The results indicated that for average and low average men, listening was as effective a reading in recall of factual information from simple and complex passages. The average group surpassed the low group in listening and reading. Individual differences emerged for modality preference for some subjects. Those individuals in the high mental aptitude group demonstrated higher comprehension during time-compressed speech. All subjects performed more efficiently with a speech rate of 275 words per minute than with the noncompressed rate of 175 words per minute.

Sticht argued that his findings had implications for education and training in the selection of materials and for modality based instruction. He stated that since listening efficiency may improve with time-compressed speech, the time saved might be used to preview, review, repeat, or extend materials to improve peak levels of comprehension. Finally Sticht (1968) suggested that time-expanded or time-compressed speech might be used with low aptitude individuals for training in improving reading and listening performance.

Comprehension and Linguistic Processing

Foulke (1968) premised that research in varying speech rate through a wide range of speeds would open new avenues for investigating the cognitive processes that underlie the perception of speech. Foulke examined changes in listening comprehension as word rate varied over a wide range of speeds. College students listened to a 2,925 word selection chosen for content, interest, and difficulty. The speech of presentation covered the range from 125 words per minute through 400 words per minute. The listening environment was controlled by the use of individually operated headphones. After conclusion of the listening selection, subjects were immediately tested for comprehension. According to the data, Foulke noted that listening comprehension began to decline rapidly beyond 250 words per minute; however, loss of listening comprehension did not reach the statistically significant level until a word rate of 300 words per minute. Foulke found a marked decline in comprehension at 250 words per minute and stated that his findings supported the hypothesis that accelerated word rates may cause perceptual processing problems for the listener. Foulke concluded that a given amount of time is necessary for the perceptual field in listening. Sticht (1968) noted that the occurrences in individual differences in listening and reading comprehension might be modality specific.

Friedman and Johnson (1968) tried to identify sources of individual variation during time-compressed speech basing their research on Bloom's theory of higher mental processes, specifically, evaluation and models of speech perception involving analysis by synthesis. Ten tests were administered and investigated as possible predictors of listening comprehension. Friedman and Johnson found vocabulary measures to be an efficient predictor of listening comprehension at four rates of presentation. They suggested that the general language aptitude which appeared to be involved in comprehension at normal rates of presentation was relatively less important at higher rates. Friedman and Johnson concluded that when the speech signal is degraded in time-compressed speech, the listener must repeatedly form, test, and reject hypotheses; a need for greater perceptual processing of degraded information coincides with an increased rate of input.

Educational Implications

The educational implications for time-compressed speech have brought about research at the elementary grades concerning comprehension, modality preference, and effectiveness of learning through listening and reading. Woodcock and Clark (1968) suggested that time-compressed speech could be an efficient learning medium for elementary school students. Their research was based on the hypothesis that

normal speaking rates of 125 to 175 words per minute tends to be tedious for some students and that the brain may be capable of processing linguistic information at a faster rate. From these hypotheses, Woodcock and Clark (1968) reasoned that more information could be transmitted per unit of time; subsequently, information could be presented at a rate nearer the students' processing capacity. Woodcock and Clark concluded that word rates of 228 words per minute to 328 words per minute were more efficient for learning and retention than the normal rate of 175 words per minute. They advised the utilization of instructional materials and programs incorporating time-compressed speech.

Blosner, Weidner, and Dinero (1976) suggested that the study of rate controlled speech might offer insight into the improvement of listening and reading ability particularly for students having developmental and inadequate auditory perceptual processing skills. They advised that teachers and clinicians purposefully reduce verbal presentation rate in specific remediation and general education of all children. They based this position on information processing contending that the student with a language problem would have greater time for processing the linguistic information.

DeWeaver (1979) found that normal presentation speed produced comprehension not significantly different from that at expanded or compressed speeds for nonblind, handicapped

elementary school students. The current research shows a diversity of opinion in the usefulness of time-compressed and expanded speech as well as disagreement in results.

Neville (1975) used a large group of middle school age students to compare listening and reading in rate controlled presentations. The purpose of her study was to determine whether the differences in the speed of the aural message accompanying silent reading would produce more variation in comprehension than differences in the speed of only an aural message. Neville concluded that for some students the simultaneous presentation of the same message in two perceptual modes might be confusing above the normal rate of speech. Neville suggested that the combination of listening and reading would be useful in reducing vocalization and in aiding reading fluency at the aural stage of reading.

Time-compressed and time-expanded speech are areas of listening readily open to more empirically based research. The classroom implications concern the presentation of information at speeds which would promote optimum reception and learning.

Summary

A review of the literature related to listening has illustrated the emergence and development of listening as a viable research subject. Although listening has been

recognized as the foundation for linguistic competence in speaking, reading, and composition, it has not been given the necessary curriculum attention. Authorities such as Landry (1969) have recognized the 1917 study of Erikson and King as the beginning of listening research. Kean (1982) placed the serious investigation of listening in 1926 with the work of Paul T. Rankin. Research during the following twenty years tended to be sporadic and primarily concerned with methods of presentation. The study conducted by Wilt (1946) established the crucial educational implications for listening in the elementary classroom. The gradual development of listening research was illustrated by the marked increase in doctoral dissertations. The work of Russell and Russell (1959) gave impetus to the classroom implementation of listening instruction. Devine (1982) and Wolvin and Coakley (1979) have advanced the current status of listening instruction with their publication concerning the direct, consistent teaching of listening.

The research which took place during the period extending from the early 1950's through the middle 1970's was characterized by the growing awareness that listening could be modified through direct instruction. Devine (1978), Landry (1969), and Arrasijid (1973) proposed that listening is a primary means of learning and that children require the development of their listening potential.

Lundsteen (1964), Fawcett (1966), Hollow (1956), Pratt (1956), Kellog (1966), and Penfield and Marascuilo (1972) hypothesized that listening behavior could be modified by planned, systematic instruction. Differentiated instructional approaches and commercial programs were tested by Canfield (1961), Kraner (1963), and Kellog (1966).

Primarily the research in listening instruction was conducted at the elementary and intermediate grade levels. However, Griffin and Hannah (1960) and Brown (1954) investigated listening at the college level noting that listening behavior was amenable to change through direct instruction. More current study has related to the development of listening skill and listening comprehension through the use of instructional models. The instructional model posed by Crowell and Au (1979) was based on a model of story comprehension with the intention of enabling the student to become an active processor of story information.

During the latter part of the 1970's, research was directed toward constructing theoretical models of the listening process. These models were attempts to analyze, interpret, and clarify the dimension of listening. Lundsteen (1979), Friedman (1978), Wolvin and Coakley (1979), an Sticht, Beck, and Hauke (1974) developed models directed toward educators in the classroom and researchers. The present models are explicative and nontechnical offering

descriptions of proficient listening, the decoding of oral language, the mobilization of cognitive and affective factors, and the developmental sequence posed by Sticht, Beck, and Hauke (1974) on languaging behavior. The models are representative of the serious study of listening from a theoretical perspective.

A review of the literature on listening has consistently indicated that listening and reading are closely linked processes (Plattor, 1969; Lundsteen, 1979; Hollingsworth, 1968). Analogous features characterize listening and reading such as the processing of linguistic information, decoding, comprehending, and cognitive and affective activity (Mead, 1978; Bradtmueller, 1978). Much of the research conducted on the relationship of listening and reading has attempted to establish the superiority of one modality over the other. Language processing, metacognitive awareness, and the role of comprehension have been current areas of investigation. A degree of controversy surrounds the discussion of comprehension through either the reading or listening channel. Arguments for listening comprehension as a series or progression of interrelated steps are contained in the literature. Sticht (1972) argued for a wholistic concept of comprehension contending that comprehension of speech and print is a function of global language ability.

Mosenthal (1977) considered the wholistic concept of language comprehension in his study of language reconstruction and reproduction in formal and informal contexts. Walker (1974-75), Guthrie and Tyler (1976), Berger and Perfetti (1977), and Evans (1978) investigated listening from the stance of language processing, comprehension, the nature of the learner, the role of memory, and the reception and interpretation of linguistic structures.

In the study of the reading and listening relationship, Hollingsworth (1964), Reddin (1968), Bursuk (1971), and Schneeburg (1977) hypothesized that direct instruction in the listening modality would result in a positive transfer to reading ability. The aural, visual, and combined approaches to presenting lesson material were investigated by Many (1965) and Swalm (1974).

During the past forty years, listening research has concerned time-compressed and expanded speech in attempts to study language processing, comprehension, and listener rate of reception. Foulke (1968), Sticht (1968), and others found that a rapid decline in comprehension occurred when oral material was presented at highly compressed speeds. The study of expanded and time-compressed speech offered implications for reading and language arts instruction. Neville (1975) suggested that a combination of timed oral presentations coupled with silent reading would be effective

in reducing or preventing vocalization. Adjusting the rate of presentation according to the student's ability to process spoken language was suggested by Woodcock and Clark (1968).

A review of the literature on listening revealed the importance of listening in all classroom environments. Listening has been recognized as a major channel of learning and that children and adults have the potential for development of listening ability.

CHAPTER III

DESIGN OF THE STUDY

Introduction

The investigation was conducted at the elementary school level within the second, third and fourth grades from the Johnson County School System, Mountain City, Tennessee. The 102 participants were given the reading and language arts strands from the 1978 edition of The Metropolitan Achievement Test Survey Battery, which included the Primary I, Primary II, and Elementary levels of Forms JS and KS. The major purpose of this investigation was to determine the usefulness and applicability of listening comprehension as a tool for predicting reading and language arts achievement at the lower elementary levels. A secondary purpose was to determine which reading and language arts components were most closely related to listening comprehension. An additional purpose was to investigate the stability of the correlations between listening and the reading and langauge arts components over an interval of three months. The investigation considered the following research questions:

1. What is the usefulness and applicability of the listening comprehension component of a standardized test as a predictive tool for determining reading

and language arts achievement in the lower elementary grades?

2. What reading and language arts components have the highest degree of relationship to listening comprehension?
3. Did the reading and language arts scores from Form JS and Form KS remain stable or did significant differences occur between the dates of test administration?

Chapter III contains a description of the procedures followed during the investigation, a description of the test group, a description of the test instrument, a review of the test administration, and a description of the analysis of data.

The Participants

The participants in this investigation consisted of 102 second, third, and fourth grade students enrolled in the Johnson County School System located in Mountain City, Tennessee. The county is a predominantly rural, Appalachian county located in northeast Tennessee. The general socio-economic status of the total county population is in the middle to lower income level. The county population is predominantly Caucasian.

The participants were obtained through parental response rather than by a random selection process. The test group was composed of 33 second grade pupils, 33 third grade pupils, and 36 fourth grade pupils. There were 42 females and 60 males in the test group. All participants were Caucasian. The average age of the second grade was 7.7; the average third grade age was 8.7; and, the average fourth grade age was 9.6.

Administration of the Test

The investigator administered the reading and language arts strands of The Metropolitan Achievement Test-Survey Battery to the 102 participants during the days of November 30, 1982, and February 28, 1983. Form JS of Primary I, Primary II, and the Elementary levels was given on November 30, 1982. Form KS of Primary I, Primary II, and Elementary levels was given on February 28, 1983. Parallel forms of The Metropolitan Achievement Test-Survey Battery were used to: (1) provide two sets of raw score data for use in the regression analysis for predicting reading and language arts achievement, and (2) determine if the raw scores and the correlational relationships for the reading and language arts components would remain stable or change over a three month interval.

Each cluster of listening items consisted of a question followed by a brief prose selection read orally by the test administrator. Three pictorial options accompanied each question. Each item was presented to the test group a single time with intervals of ten seconds interposed between questions. Administration of the Primary I listening cluster required 90 seconds for completion after the initial time allowed for giving directions. The Primary II and Elementary listening clusters were allotted approximately 60 seconds to administer. The listening items were followed by the remaining language arts clusters. The reading strand for each level consisted of timed silent reading passages accompanied by five to six questions.

Review of the Test Instrument

The language arts and reading tests used in this investigation were subtests taken from the 1978 edition of The Metropolitan Achievement Test-Survey Battery forms JS and KS. The Metropolitan Achievement Test is published by the Psychological Corporation, Harcourt Brace, and Jananovich, Inc. The selection of this test instrument was based on the listening comprehension cluster designed for the primary and elementary grades.

The Metropolitan Achievement Test-Survey Battery was developed for use in classrooms from the kindergarten to

high school levels. The test was constructed in accordance with the theory that achievement tests should assess what is actually taught in the classroom or expressly stated in instructional objectives in the form of skills, concepts, and applications. In developing this edition, textbooks, curriculum guides, and other curriculum materials were used in order for the final test to represent a balanced curriculum.

The standardization of the 1978 edition of The Metropolitan Achievement Test-Survey Battery was designed for fall and spring norms. The sample of 550,000 students involved in the norming process were selected to be representative of the national population regarding school system enrollment, geographic region, ethnic background, and socioeconomic status. Because of various school curricula, the authors have advised that each school using this test assess the content validity according to individual curriculum policy. The Kuder-Richardson Formula 20, standard errors of measurement in terms of raw scores, and grade equivalents are reported for each content field by grade level. The reliability estimates reported for the reading and language arts strands for Primary I, Primary II, and the Elementary level (pp. 70, 84, 86) have been reported as:

Level	rk-r	rs	ss	ge
Primary I--Reading	.96	2.7	17.6	.2
Language arts	.87	2.5	39.6	.6

Level	rk-r	rs	ss	ge
Primary II--Reading	.95	2.9	16.6	.4
Language arts	.91	2.9	29.4	.5

Level	rk-r	rs	ss	ge
Elementary--Reading	.96	2.8	14.8	.5
Language arts	.88	3.4	41.5	.9

Description of the Listening Tests

The listening comprehension clusters in each test level are found within the language arts strands. The listening cluster items measure comprehension of meaning and comprehension of syntactic structures. The number of listening cluster items found in each test level reflects the authors' philosophy concerning listening maturity and listening skill acquisition of primary and elementary age children. Each listening cluster is based on meaning and syntactic comprehension. However, each stated objective is not tested at every level.

The measurement of syntactic structures concerns syntax, pronouns and referents, rhyming words, and main ideas. The meaning objectives assess concept formation,

following directions, negatives, specific details, and sequence and order. These objectives are related to a child's everyday experiences with language such as describing sequence, recalling details, following directions, and understanding negatives. The syntax items concentrate on the child's understanding of grammatical structure.

The listening cluster in Primary I contains nine items, five of which measure objectives from the meaning comprehension group, and four items which assess syntact objectives. The Primary II and the Elementary clusters contain a total of five items each. Primary I level measures all listening objectives except placement and position. A criterion score of eight to nine items answered correctly is expected for Primary I. The Primary II and the Elementary levels have a criterion score of four out of five items to be answered correctly.

Review of the Language Arts Tests

The Metropolitan Achievement Test-Survey Battery contains a language arts strand which assesses spelling, capitalization and punctuation, grammar and syntax, usage, listening, and study skills. Punctuation and capitalization are tested separately at the lower levels. At the Primary II and at the Elementary level, several different

skills are needed to answer the capitalization and punctuation items correctly. The punctuation items include end marks, apostrophe s in contractions and possessives, commas, and periods in abbreviations. The capitalization items include the word I, proper nouns, story titles, titles of people, and the first word in sentences.

The usage cluster emphasizes standard English, common irregular verbs, contractions, the verb, to be, pronouns, and at the upper levels, words which children find frequently confusing. The criterion score for Primary I is recommended to be four to five items correctly answered from a total of five. At Primary II, the criterion score for usage is recommended to be seven correctly answered items from the total of eight items. At the Elementary level, students are expected to correctly answer six to seven items from the total of nine.

Primary I level is more concerned with the student's understanding of syntactical structures rather than with a knowledge of grammatical terms. The grammar and syntax cluster in Primary II measures sentence sense, sentence completion, and sentence fragments. The Elementary level assesses the student's skill at differentiating among different types of sentences, identifying subjects and predicates, and a knowledge of parts of speech. The Primary I student is expected to answer from six to seven

items correctly from a total of seven. At the Primary II level, the criterion is six to seven correct answers from a total of nine. The Elementary level suggests a criterion score from six to seven correct answers from a total of nine.

The spelling clusters in each level include words which are classified at various grade levels. Primary I spelling words range from the first grade to the third grade. Primary II spelling words are considered second, third, and fourth grade level. Finally the Elementary level words span the third, fourth, and fifth grades. The Primary I level spelling cluster contains nine items. A criterion of six correct responses is suggested. At the Primary II level, the criterion score for the total of 9 items is six correct answers. The Elementary level criterion score is nine correct answers from a total of twelve.

Study skill items measure alphabetizing, the use of reference sources, the use of the dictionary, the organizational plan of books, the knowledge of the pronunciation guide, an a knowledge of library systems. The criterion score for the four items at the Primary I level is three to four correct answers. At the Primary II level, a criterion of five out of seven items answered correctly is expected. The criterion score for the Elementary level is four to five correctly answered items from a total of five.

Review of the Reading Tests

The main objective of the reading clusters of The Metropolitan Achievement Test is to measure the comprehension of written language at the literal, inferential, and evaluative stages. The reading strand contains passages and questions which correspond to basal passages found in most graded or leveled reading programs. Literal, inferential, and evaluative comprehension are represented in the passages and questions along with specific vocabulary and contextual analysis.

The reading passages at the Primary I level present simple topics written in concise, familiar language. At the lower levels, more emphasis is given to literal comprehension which is reflected in the vocabulary and the questions. As the grade levels increase, the reading passages become more difficult. The complexity of language structure is illustrated by the inclusion of embedded clauses, passive verbs, and the subjunctive mood.

According to the authors, the reading test in the Survey Battery are also designed to estimate a student's instructional reading level. The test constructed to give an instructional reading level indicates the level at which a student can learn without experiencing inhibiting difficulties. The score which the reading strand yields is unlike a grade equivalent which is norm references. The

instructional reading level is based on the criterion referenced scoring system.

The reading passages found at the Primary I level are carefully graded to establish the instructional reading level. Nine silent reading selections which vary from primer to grade three make up Primary I. The questions follow a multiple choice format, and students may refer to the selection for answers. Passage difficulty is commensurate with a basal reader of the same level. Passage difficulty was controlled through vocabulary, paragraph and sentence length, complexity of ideas, and interest level of the content. Primary II reading test is composed of eleven passages at six reading levels extending from primer through grade five. Five multiple choice questions follow each passage. The Elementary level has eleven passages at reading levels ranging from the second grade through the sixth grade. Four to seven multiple choice questions follow each reading selection.

Each reading strand emphasizes comprehension. The comprehension objectives listed for Primary I entail:

1. Selecting the picture which illustrates the meaning of the rebus sentence.
2. Selecting the sentence which matches the stimulus picture.

3. Using context clues to determine the meaning of a vocabulary word.
4. Answering literal comprehension question.
5. Using stated information to locate the main idea, details, and cause and effect.
6. Using information to infer answers related to the main idea, comparison and contrasts, and cause and effect.
7. Use of information implied in the selection to infer answers relating to details, sequence, and predicting outcomes.
8. Evaluation of passage information relating to judgments concerning mood and criticism.

The stated comprehension objectives for Primary II and for the Elementary level are comparable to Primary I.

Analysis of Data

This investigation employed statistical analyses chosen to correspond to the research questions. The questions posed were designed to: (1) determine if a listening comprehension component from a standardized achievement test would be a useful and applicable tool for predicting reading and language arts achievement at the lower elementary levels, (2) locate the language arts and reading components having the highest degree of relationship to listening

comprehension, and (3) determine if the raw scores and correlational relationships from Form JS and Form KS for the reading and language arts components would remain stable during the interim between dates of testing. Analyses of the raw score data obtained from The Metropolitan Achievement Test-Survey Battery were based on sets of grade level scores and the total set of scores for 102 participants.

Stepwise Multiple Regression Analysis was used with the first research question to determine if listening comprehension could be used to predict reading and language arts achievement at the lower elementary levels. The Stepwise Regression Analysis was based on sets of dependent and independent variables positioned in regression equations. Young and Veldman (1981) represented the regression equation as follows:

$$\hat{y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots + \beta_i X_i$$

Research Question II used the Pearson-Product Moment Correlation Analyses to locate the reading and language arts components having the highest degree of relationship to listening comprehension. The term, correlation coefficient, designated the degree of correspondence or relationship between two variables which tend to vary together increasing together or as one variable decreases, the other increases (Roscoe, 1969). A value of -1 to +1 described the magnitude

of the relationship between the two variables (Ferguson, 1982).

The interpretation of the correlation coefficient shown by the term, r, was based on the following scale of values (Davis, 1971, p. 49):

+1.00	A perfect positive relationship
-.70 or higher	A very strong positive association
+.50 to +.69	A substantial positive association
+.30 to +.49	A moderate positive association
+.10 to +.29	A low positive association
+.01 to +.09	A negligible positive association
.00	No association
-.01 to -.09	A negligible negative association
-.10 to -.29	A low negative association
-.30 to -.49	A moderate negative association
-.50 to -.69	A substantial negative association
-.70 or lower	A very strong negative association
-1.00	A perfect positive relationship

The Pearson-Product Moment correlation (Wyatt & Bridges, 1967, p. 205) is given by the following equation:

$$r = \frac{\Sigma xy - \frac{\Sigma x \cdot \Sigma y}{n}}{\sqrt{\Sigma X^2 - \frac{(\Sigma X)^2}{n} \quad \Sigma y - \frac{(\Sigma y)^2}{n}}}$$

Research Question III involved the use of a t-test for nonindependent samples. The Paired Differences statistic was used to determine if the reading and language arts raw scores and correlational relationships from Form JS and Form KS remained stable or changed during the interim of three months between the dates of testing. The equation for the Paired Differences t-Test (Melnyk, 1974, pp. 562-563) was:

$$t = \frac{\bar{D}}{\sqrt{\frac{\Sigma D^2 - \frac{(\Sigma D)^2}{n}}{n(n-1)}}}$$

A Run's Test was used to examine the two sets of scores from the reading and language arts components from Form JS and Form KS for each grade level to determine if the run of scores could be attributed to randomness or to a common element such as an individual score. Computation of the Run's Test (Freund, 1967, p. 328) was based on the following set of equations:

$$\mu_\mu = \frac{2(n_1\ n_2) + 1}{N_1 + N_2}$$

$$\gamma^2 = \frac{2N_1\ N_2\ (2\ N_1\ N_2 - N_1 - N_2)}{(N_1 + N_2)^2\ (N_1 + N_2 - 1)}$$

$$y = \frac{\mu - \mu_\mu}{\gamma} + 1/2$$

Summary

The investigation reported in Chapter III examined the usefulness and applicability of listening comprehension as a tool for predicting reading and language arts achievement in the lower elementary grades. The investigation was conducted in the second, third, and fourth grades. The reading and language arts strands of The Metropolitan Achievement Test-Survey Battery, Forms JS and KS, Primary I level, Primary II level, and Elementary level were administered to 102 participants during November 1982 and February 1983.

Stepwise Multiple Regression Analysis was used to determine the usefulness of listening comprehension as a tool for predicting reading and language arts achievement. The regression analysis was computed for the total test group and for the test group divided by grade levels.

Each reading and language arts component was correlated with the listening data for the total test group and for each grade using both pretest and posttest scores. The Pearson-Product Moment Correlation was the statistical analysis used to identify the reading and language arts variable most closely associated with listening comprehension.

The Paired Differences t-Test was calculated for the sets of reading and language arts components from Form JS

and Form KS for the total 102 scores and for the grade level scores. The t-test was used to determine if the raw scores and correlational relationships from the language arts and reading components of Form JS and Form KS remained stable or changed significantly over an interval of three months.

CHAPTER IV

RESULTS

Introduction

The contents of Chapter IV include a description of the research questions, the purpose of the investigation, the research procedures and test instrument, and the results obtained from the UTCC Statistical Analysis System. The organizational sequence of the chapter begins with a general discussion of the investigation, the procedures, and concludes with the reporting of the results.

The major purpose of this investigation was to determine the usefulness and applicability of listening comprehension as a tool for predicting reading and language arts achievement at the lower elementary levels. A secondary purpose was to determine which reading and language arts components were most closely related to listening comprehension. An additional purpose was to investigate the stability of the correlations between listening and the reading and language arts components over an interval of three months. The investigation considered the following research questions:

1. What is the usefulness and applicability of the listening comprehension component of a standardized

test as a predictive tool for determining reading and language arts achievement in the lower elementary grades?

2. What reading and language arts components have the highest degree of relationship to listening comprehension?
3. Did the reading and language arts scores from Form JS and Form KS remain stable or did significant differences occur between the dates of test administration?

The statistical techniques necessary for the consideration of these questions were Stepwise Multiple Regression Analysis, Pearson-Product Moment Correlation Analysis, and the Paired Differences t-Test.

Research Procedures

The investigation was conducted in the second, third, and fourth grades of the Shouns Elementary School located in Mountain City, Tennessee. The test groups consisted of 102 participants averaging in age from 7.7 years to 9.6 years. There were 42 females and 60 males in the test group. The second and third grades were composed on 33 participants; the fourth grade group was composed of 36 participants.

The test instrument was The Metropolitan Achievement Test-Survey Battery which included the Primary I,

Primary II, and Elementary levels of Form JS and Form KS. Parallel forms of the test were used to: (1) provide two sets of raw score data for use in the regression analysis for predicting reading and language arts achievement, and (2) determine if the scores and the correlational relationships for the reading and language arts components would remain stable or change over a three month interval.

The reading and language arts strand of the test were administered during November 1982 and February 1983. The reading strand assessed vocabulary, literal, inferential, and evaluative comprehension. The language arts strand assessed listening, grammar, punctuation, usage, spelling, and study skills. Primary I level was used with the second grade participants. Primary II level was applicable for the third grade participants. The Elementary level was used with the fourth grade participants.

Statistical Analysis

Stepwise Multiple Regression Analysis was used with Research Question I to determine if listening comprehension would be an applicable and useful predictor of reading and language arts achievement. Multiple Regression Analysis required the use of the independent variables in order to predict the dependent variable. Two sets of listening comprehension scores were used as constant predictors. In

order to predict reading achievement, the listening components were combined systematically with punctuation, spelling, usage, grammar, and study skills. In order to predict language arts achievement, the listening components were systematically combined with vocabulary, literal specific comprehension, literal global comprehension, inferential specific comprehension, inferential global comprehension, and evaluative comprehension. This procedure was followed using the raw score data obtained from the total scores and from the scores divided into grade levels.

Stepwise Multiple Regression Analysis combined the independent variables to form a set of four steps labelled I, II, II, and IV. Step I offered the single best predictor of the dependent variable. Step II produced a combination of the two best predictor variables. Step III produced a combination of the three best predictor variables, and Step IV used all four predictor variables. In addition to the sequence of steps, Stepwise Regression Analysis yielded regression coefficients which acted as weights for each independent variable and R^2 coefficients which reported the percentage of explained variance.

Research Question II addressed the relationship between listening and each language arts component and each reading component. The statistical analysis used to consider this research question was the Pearson-Product Moment Correlation

technique which provided a coefficient of correlation to determine the reading and language arts component, or variable, showing the most correlation with listening comprehension. The values of the coefficient of correlation fell between -1 to +1. Values falling from .01 to .09 denoted a very negligible relationship. The presence of 0 indicated that no relationship could be found. A coefficient of .10 to .29 denoted a low correlation. THe range of values in the coefficient from .30 to .49 indicated a moderate relationship. A substantial relationship was denoted by the value range of .50 to .59. These scales referred to both the positive and negative correlation coefficients.

The Paired Difference t-Test was computed from the sets of paired reading and language arts scores from Form JS and Form KS for the total set of 102 scores and for the grade level scores. The Paired Difference t-Test was used to determine if the scores and correlational relationships for the reading and language arts components from Form JS and Form KS remained stable or changed significantly during the interim of three months between the dates of test administration. Because achievement tests tend to limit the number of items per subtest, a Run's Test was used to determine if the pattern of scores from the language arts and reading components from Form JS and Form KS could be attributed to

random occurrence or to a common element such as the repetition of an individual score.

Report of the Results

The organizational sequence for reporting the results of this investigation include: (1) reading and language arts performance based on the measures of central tendency; (2) the Stepwise Multiple Regression Analysis stated in for form of equations which were calculated for 102 sets of scores and for the grade level scores; (3) the Pearson-Product Moment Correlations between listening comprehension and each reading and language arts component for the total set of scores and for the grade level scores; (4) the Paired Differences t-Test calculated for Form JS and Form KS reading and language arts components according to the total set of scores and for the grade level scores; and, (5) the Run's Test calculated for the Form JS and Form KS reading and language arts components for each grade level.

Measures of Central Tendency

The measures of central tendency reported in Table 1 included the means, and standard deviations obtained from the total set of 102 scores for the Form JS and Form KS measure. The means and standard deviations were reported for each reading and language arts component. The means of

Table 1

The Measures of Central Tendency from the November 1982 Total Form JS MAT Scores and the February 1983 Total Form KS MAT Scores Obtained from the Second, Third, and Fourth Grade Participants from the Johnson County School System, Mountain City, Tennessee

Total battery means and standard deviations				
	Means	SD	Means	SD
Reading	Form JS		Form KS	
Vocabulary	1.22	1.19	5.23	3.10
Literal specific	18.09	8.22	35.25	19.80
Literal global	4.17	2.65	21.02	12.69
Inferential specific	4.10	2.50	33.11	9.37
Inferential global	2.70	1.79	2.77	1.36
Evaluative	1.08	.934	4.37	2.76

the reading components ranged from 1.08 to 18.09 with standard deviations extending from .934 to 8.22 for the Form JS scores. The Form KS means ranged from 2.77 to 35.25 with standard deviations ranging from 1.36 to 19.80. The Form JS language arts means fell within a range from 3.60 to 7.72 with the standard deviations extending from 1.55 to 2.81. The Form KS language arts means produced values falling between 3.16 to 9.92 with the standard deviations ranging from 1.023 to 3.79.

Table 2 reports the Form JS measures of central tendency for each reading and language arts component based on grade level scores. The means from the second grade reading Form JS indicated a range of values from .424 to 13.90. The means for the second grade Form JS language arts scores fell into a range from 2.09 to 6.81.

At the third grade level, the means for the Form JS reading scores ranged from .576 to 3.72. The means obtained from the language arts scores extended from .950 to 2.95.

At the fourth grade level, the means obtained for the reading components showed a range of values from 1.62 through 17.1. The fourth grade language arts Form JS scores produced means of 3.47 to 8.02.

Measures of central tendency for the Form KS reading and language arts components based on the second, third, and fourth grade scores are presented in Table 3. At the second

Table 2

The Measures of Central Tendency from the November 1982 Form JS MAT Scores for the Second, Third, and Fourth Grade Participants from the Johnson County School System, Mountain City, Tennessee

	Grade 2			Grade 3			Grade 4		
	Mean	SD	Var.	Mean	SD	Var.	Mean	SD	Var.
Reading									
Vocabulary	.424	.502	.252	1.00	6.12	.375	2.16	1.40	1.97
Literal specific	13.90	2.27	27.7	23.3	7.88	62.1	17.1	8.33	69.4
Literal global	2.60	1.71	1.37	3.18	1.33	1.77	6.52	2.92	8.54
Inferential specific	6.03	2.55	6.53	3.72	2.09	4.39	2.69	1.54	2.39
Inferential global	2.06	.096	.934	3.30	1.66	2.78	2.86	2.27	5.15
Evaluation	1.00	.791	.625	.576	.502	.252	1.63	1.07	1.15
Language arts									
Listening	6.81	1.01	1.02	3.81	.950	.903	4.47	.696	.485
Punctuation	3.97	1.46	2.5	7.90	2.62	6.89	9.77	3.88	15.09
Grammar	2.78	1.39	1.29	5.03	1.86	3.46	5.55	1.68	2.82
Usage	5.33	1.109	1.22	7.21	1.26	1.61	3.47	1.87	3.51
Spelling	6.12	2.27	5.17	8.90	2.95	8.71	8.02	2.56	6.59
Study skills	2.09	.843	.710	5.80	1.64	2.71	3.44	1.38	1.91

Table 3

The Measures of Central Tendency from the February 1983 Form KS MAT Scores for the Second, Third, and Fourth Grade Participants from the Johnson County School System, Mountain City, Tennessee

	Grade 2			Grade 3			Grade 4		
	Mean	SD	Var.	Mean	SD	Var.	Mean	SD	Var.
Reading									
Vocabulary	1.03	.810	.65	2.66	1.65	2.7	2.94	1.80	3.2
Literal specific	17.03	7.88	65.1	19.78	7.96	63.3	20.8	8.90	79.3
Literal global	2.48	.677	3.1	3.18	1.68	2.8	3.41	1.91	3.6
Inferential specific	3.51	1.90	3.6	5.81	2.33	5.4	5.22	2.69	7.2
Inferential global	1.27	1.06	1.14	2.36	1.11	1.2	2.44	1.22	1.5
Evaluation	.727	.452	.205	.424	.502	.252	.750	.692	.479
Language arts									
Listening	4.18	.983	.96	3.72	1.098	1.2	3.77	.959	.921
Punctuation	6.36	2.23	4.98	10.54	2.75	7.5	12.61	3.21	10.3
Grammar	5.66	2.13	4.54	3.66	2.60	4.1	4.11	2.10	4.4
Usage	4.72	2.05	4.20	4.69	1.97	3.9	5.33	2.07	4.2
Spelling	5.18	2.67	7.15	6.48	2.86	8.19	8.38	2.11	4.7
Study skills	3.12	2.24	5.04	3.09	1.33	1.77	3.19	1.78	3.1

grade level, the mean values fell within a range of .727 to 17.03 for the reading components. The language arts mean values ranged from 3.12 to 6.36.

At the third grade level, the reading scores generated a set of means ranging from .424 to 19.78. The language arts scores yielded mean values extending from 3.09 to 10.54.

The fourth grade reading means fell within a range from .750 to 20.8. The mean values for the language arts scores ranged from 3.19 to 12.61.

Research Question I--Multiple Regression Analysis

Research Question I was designed to assess the applicability and usefulness of listening comprehension as a predictive tool for determining reading and language arts achievement. Stepwise Multiple Regression was used to consider this research question. The calculations for Stepwise Regression were based on the total set of scores for each reading and language arts component and on the sets of grade level scores for the components. The procedure produced a regression equation with R^2 coefficients, F coefficients, and levels of significance. The R^2 was converted to a percentage to specify the amount of explained variance.

Table 4 lists the language arts and reading components with a corresponding X_x designation found in the regression equations. A designation of X_1 indicated that the component was from Form JS. A designation of X_2 indicated that the component was from Form KS.

The initial set of regression equations contained the listening and language arts components combined to predict reading achievement. The calculations were based on the total scores.

In Table 5 the listening and punctuation equations produced F coefficients which were all significant at the .0001 level. Listening appeared in a Step I equation without a punctuation component and produced an R^2 of .42. In the Step II equation, two listening components produced an R^2 of .45. At Step IV, the equation with two listening and two punctuation components gave an R^2 coefficient of .50.

Table 6 presents the listening and usage equations. The F values for each equation were significant at the .0001 level. Step I and II expressed only the usage components with R^2 coefficients of .42 and .49. Step III introduced a listening component with the R^2 at .50. Step IV produced an R^2 of .51.

Table 7 lists the listening and grammar components. The grammar component appeared in Step I and Step II. Step III combined a listening component with grammar to

Table 4

The X_x Designations for the Reading and Language Arts Components from the Form JS MAT and the Form KS MAT for the Stepwise Multiple Regression Equations for the Second, Third, and Fourth Grade Participants from the Johnson County School System, Mountain City, Tennessee

Listening 1	X_1	Vocabulary I	X_{13}
Listening 2	X_2	Vocabulary 2	X_{14}
Punctuation 1	X_3	Literal Specific 1	X_{15}
Punctuation 2	X_4	Literal Specific 2	X_{16}
Usage 1	X_5	Literal Global 1	X_{17}
Usage 2	X_6	Literal Global 2	X_{18}
Grammar 1	X_7	Inferential Specific 1	X_{19}
Grammar 2	X_8	Inferential Specific 2	X_{20}
Spelling 1	X_9	Inferential Global 1	X_{21}
Spelling 2	X_{10}	Inferential Global 2	X_{22}
Study Skills 1	X_{11}	Evaluative 1	X_{23}
Study Skills 2	X_{12}	Evaluative 2	X_{24}

Table 5

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Punctuation Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 55.4 + 6.35\ X_2$	72.7***	.42
II	$y = 43.1 + X_1\ 4.13 + X_2\ 2.84$	41.7***	.45
III	$y = 19.39 + X_1\ 4.29 + X_2\ 2.73 + X_3\ 6.14$	31.0***	.48
IV	$y = 2.87 + X_1\ 4.47 + X_2\ 3.22 + X_3\ 3.27 + X_4\ 4.56$	24.26***	.50

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 6

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Usage Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 43.7 + X_5\ 11.76$	74.3***	.42
II	$y = 31.1 + X_6\ 5.45 + X_5\ 9.35$	48.6	.49
III	$y = 45.38 + X_5\ 9.89 + X_6\ 4.4 + X_1$	33.21***	.50
IV	$y = 37.3 + X_1\ 3.49 + X_2\ 3.94 + X_5\ 4.05 + X_6\ 9.81$	25.70***	.51

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 7

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Grammar Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 73.9 + X_8\ 6.2$	15.02***	.13
II	$y = 105.6 + X_1\ -8.3 + X_8\ 8.53$	15.52***	.23
III	$y = 88.9 + X_1\ -9.45 + X_2\ 6.18 + X_8\ 8.10$	11.77***	.26
IV	$y = 78.03 + X_1\ -9.03 + X_2\ 5.71 + X_7\ 2.23 + X_8\ 7.83$	9.49***	.28

Levels of Significance: * = .05; ** = .01; *** = .0001.

produce an R^2 of .26. Step IV combined the four components and yielded an R^2 of .28.

Table 8 lists the listening and spelling equations. Each F was significant at the .0001 level. Step II with two spelling components gave an R^2 of .55. Step IV with all four components produced an R^2 of .55 with negligible contribution from listening.

Table 9 presents the equations for the listening and study skills components. The equations in Step I and II reported only the study skills components with R^2 values of .34 and .46. Step III and Step IV included the listening components. Step II and IV produced R^2 coefficients of .47.

Table 10 begins the regression equations generated from the listening and reading components for predicting language arts achievement. The calculations were based on the total scores. In Table 10, the F values for Step I, II, and III were significant at the .0001 level. The R^2 values were low and ranged from .17 to .19 for the combination of listening and vocabulary.

Table 11 shows the listening and literal specific comprehension equations. The R^2 coefficients ranged from .42 to .48. All the F values were significant at the .0001 level. Step I and II contained only the literal specific comprehension component and produced R^2 coefficients of .42

Table 8

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Spelling Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 42.4 + X_9\ 8.80$	91.5***	.42
II	$y = 26.1 + X_{10}\ 4.61 + X_9\ 5.94$	61.15***	.55
III	$y = 15.8 + X_2\ 2.89 + X_9\ 4.47 + X_{10}\ 5.94$	41.42***	.55
IV	$y = 19.04 + X_1\ -.75 + X_2\ 3.30 + X_9\ 4.34 + X_{10}\ 5.95$	30.85***	.55

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 9

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Study Skills Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 62.49 + X_{12}\ 12.40$	59.7***	.34
II	$y = 45.2 + X_{11}\ 6.13 + X_{12}\ 10.85$	42.95***	.46
III	$y = 32.5 + X_2\ 3.43 + X_{11}\ 6.18 + X_{12}\ 10.6$	29.39***	.47
IV	$y = 41.16 + X_1\ -1.96 + X_2\ 4.35 + X_{11}\ 5.40 + X_{12}\ 10.74$	22.23***	.47

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 10

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Vocabulary Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 25.31 + X_{13}\ 3.19$	20.8***	.17
II	$y = 21.5 + X_2\ .99 + X_{13}\ 3.12$	11.20***	.18
III	$y = 23.2 + X_1\ -.48 + X_2\ 1.24 + X_{13}\ 2.93$	7.66***	.18
IV	$y = 23.8 + X_1\ -.50 + X_2\ 1.25 + X_{13}\ 2.90 + X_4\ -.090$	5.72	.19

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 11

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 18.59 + X_{16}\ .301$	73.75***	.42
II	$y = 15.39 + X_{15}\ .300 + X_{16}\ .238$	45.33***	.47
III	$y = 13.56 + X_2\ .501 + X_{15}\ .300 + X_{16}\ .234$	30.29***	.48
IV	$y = 15.23 + X_1\ -.426 + X_2\ .716 + X_{15}\ .279 + X_{16}\ .234$	22.88***	.48

Levels of Significance: * = .05; ** = .01; *** = .0001.

and .47. Step II and IV added the listening component and produced R^2 coefficients of .48.

The listening and literal global comprehension equations are shown in Table 12. All F values were significant at the .0001 level with the R^2 reaching a maximum value of .40. Step III and IV with combinations of the listening and literal global comprehension components produced an R^2 of .40.

Table 13 lists the listening and inferential specific comprehension equations. All F values were significant at the .0001 level. The inferential specific comprehension component alone in Step I produced an R^2 of .98. Step II, III, and IV combined the listening and inferential specific comprehension components. One listening component and one inferential specific comprehension component produced an R^2 value of 1.00. The F values for Step II, III, and IV were 999999.99.

Table 14 lists the listening and inferential global comprehension equations. Step I with a single inferential global comprehension component produced an R^2 of .62. Step II combined a listening and inferential global comprehension component to produce an R^2 of .62. Step III and IV combined additional listening and inferential global comprehension components to produce an R^2 of .63. All F values were significant at the .0001 level.

Table 12

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 21.21 + .380_{18}$	38.48***	.27
II	$y = 18.10 + X_{17}\ 1.27 + X_{18}\ .25$	32.10***	.39
III	$y = 14.42 + X_2\ .972 + X_{17}\ 1.27 + X_{18}\ .271$	22.25***	.40
IV	$y = 14.78 + X_1\ -.092 + X_2\ 1.01 + X_{17}\ 1.26 + X_{18}\ .268$	16.53***	.40

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 13

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = -2.99 + X_{20}\ .97$	8453.4***	.988
II	$y = 0.000 + X_2\ -1.00 + X_{20}\ 1.00$	999999.99***	1.000
III	$y = 0.000 + X_2\ -1.00 + X_{19}\ 0.000 + X_{20}\ 1.00$	999999.99***	1.00
IV	$y = 0.000 + X_1\ .000 + X_2\ -1.000 + X_{19}\ .000 + X_{20}\ 1.000$	999999.99***	1.00

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 14

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 14.4 + X_{22}\ 5.31$	166.3***	.62
II	$y = 12.8 + X_2\ .44 + X_{22}\ 5.27$	83.2***	.62
III	$y = 14.12 + X_1\ -.356 + X_2\ .63 + X_{22}\ 5.20$	55.6***	.63
IV	$y = 14.33 + X_1\ -.39 + X_2\ .64 + X_{21}\ -.25 + X_{22}\ 5.41$	41.58***	.63

Levels of Significance: * = .05; ** = .01; *** = .0001.

The listening and evaluative comprehension equations are shown in Table 15. The range of R^2 coefficients extended from .18 to .24. Step III and Step IV with listening and evaluative comprehension components combined had an R^2 coefficient of .24.

Listening and language arts components were combined on the basis of grade level to predict reading achievement. Table 16 begins the second grade level with the equations generated for listening and punctuation.

Table 16 shows the listening and punctuation R^2 values ranging from.34 to .44. Step I and II contained only the punctuation components which produced R^2 values of .34 and .42. The four component equation in Step IV yielded an R^2 coefficient of .44. No $\underline{F}$ value attained a significant level.

Table 17 lists the listening and usage equations. The R^2 coefficients ranged from .42 to .44. The $\underline{F}$ value in Step I was significant at the .0001 level. In Step II, listening and usage produced an R^2 coefficient of .43. Two listening components and a single usage component in Step III produced an R^2 coefficient of .43. Step IV included all listening and usage components yielding an R^2 coefficient of .44.

The grammar and listening equations are listed in Table 18. The $\underline{F}$ value in Step I was significant at the .0001 level. The Step I R^2 coefficient was .41 and

Table 15

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Evaluative Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 24.6 + X_{23}\ 4.23$	22.95***	.18
II	$y = 29.9 + X_1\ -1.10 + X_{23}\ 4.41$	14.08***	.22
III	$y = 26.31 + X_1\ -1.37 + X_2\ 1.33 + X_{23}\ 4.22$	10.38***	.24
IV	$y = 25.27 + X_2\ -1.35 + X_2\ 1.35 + X_{23}\ 4.15 + X_{24}\ .227$	7.90***	.24

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 16

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Punctuation Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 30.15 + X_3\ 13.02$	16.1	.34
II	$y = 9.74 + X_2\ 11.04 + X_4\ 4.49$	11.25	.42
III	$y = -8.38 + X_2 + 11.2 + X_3\ 4.34$	.76	.44
IV	$y = -8.80 + X\ .06 + X_2\ 4.31 + X_3\ 11.28 + X_4\ 4.35$	5.62	.44

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 17

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Usage Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 33.34 + X_5\ 10.33$	22.48***	.42
II	$y = 16.71 + X_2\ 3.96 + X_5\ 10.34$	11.53	.43
III	$y = 30.77 + X_1\ -2.43 + X_2\ 4.5 + X_5\ 10.32$	7.59	.43
IV	$y = 31.1 + X_1\ -2.38 + X_2\ 4.6 + X_5\ 10.36 + X_6\ -.37$	5.50	.44

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 18

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Grammar Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 26.2 + X_8\ 9.86$	21.89***	.41
II	$y = 6.58 + X_7\ 4.85 + X_8\ 8.77$	11.59	.43
III	$y = -18.20 + X_2\ 4.59 + X_7\ 6.4 + X_8\ 8.21$	7.99	.45
IV	$y = -4.5 + X_1\ -1.74 + X_2\ 4.79 + X_7\ 5.76 + X_8\ 8.45$	5.84	.45

Levels of Significance: * = .05; ** = .01; *** = .0001.

contained only a single grammar component. Step II with two grammar components produced an R^2 of .45. The Step III and IV equations added a listening component to the grammar components to yield an R^2 of .45.

Table 19 lists the spelling and listening regression equations. All the F values were significant at the .0001 level. The R^2 values for the four equations ranged from .47 to .55. The single spelling component in Step I produced an R^2 of .47. An additional spelling component in Step II yielded an R^2 coefficient of .53. Step III and IV added the listening components to give an R^2 coefficient of .55.

Table 20 lists the listening and study skills equations. The R^2 coefficients ranged from .49 to .51 in value. The F values for Step I, II, and III equations were significant at the .0001 level. An R^2 of .49 was produced in Step I by a study skills components. An R^2 of .50 was produced in Step II by a listening and study skills components and a single study skills components which generated an R^2 coefficient of .51. The four components in Step IV produced an R^2 of .51.

The third grade regression equations for predicting reading achievement from listening and language arts components were based on sets of 33 scores. The equations begin with listening and punctuation.

Table 19

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Spelling Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 20.8 + X_9\ 9.88$	27.7***	.47
II	$y = 17.30 + X_9\ 7.22 + X_{10}\ 3.8$	17.48***	.53
III	$y = -11.25 + X_1\ 3.8 + X_9\ 7.6 + X_{10}\ 3.8$	11.88***	.55
IV	$y = -13.1 + X_1\ 3.4 + X_2\ 1.16 + X_9\ 7.4 + X_{10}\ 4.0$	8.64***	.55

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 20

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Study Skills Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 49.2 + X_{12}\ 10.24$	30.5***	.49
II	$y = 23.6 + X_1\ 3.58 + X_{12}\ 10.6$	15.48***	.50
III	$y = 18.9 + X_1\ 3.01 + X_2\ 2.12 + X_{12}\ 10.5$	10.13***	.51
IV	$y = 20.8 + X_1\ 2.9 + X_2\ 2.3 + X_{11}\ -1.43 + X_{12}\ 10.8$	7.36	.51

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 21 shows the listening and punctuation components having a range of R^2 coefficients from .35 to .50. The F values for Step II and III were significant at the .0001 level. Step II with listening and punctuation components produced an R^2 of .48. Step III with a single listening component and two punctuation components produced an R^2 of .50.

Table 22 shows the listening and usage equations. Step I contained a single listening component and gave an R^2 coefficient of .35. Step II, III and IV with combinations of listening and usage components produced R^2 coefficients of .50. Step II and III were significant at the .0001 level.

Table 23 lists the grammar and listening equations. The F values were not significant. The R^2 values ranged from .35 to .50. The listening component in Step I contributed to the R^2 coefficient of .35. The four components in Step IV gave an R^2 of .50.

The spelling and listening equations are listed in Table 24. Step I and II produced F values which were significant at the .0001 level. The single spelling component in Step I resulted in an R^2 of .61. Step II with both spelling components gave an R^2 coefficient of .68. Step III added one listening component to the spelling components generating an R^2 of .73. The four component equation produced an R^2 of .74.

Table 21

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Punctuation Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 27.6 + X_1\ 20.8$	16.81	.35
II	$y = -11.38 + X_1\ 18.41 + X_3\ 4.5$	14.37***	.48
III	$y = -9.5 + X_1\ 17.12 + X_3\ 2.05 + X_4\ 3.33$	9.75***	.50
IV	$y = -6.03 + X_1\ 17.9 + X_2\ -2.6 + X_3\ 2.1 + X_4\ 3.5$	7.23	.50

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 22

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Usage Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 27.6 + X_1\ 20.8$	16.81	.35
II	$y = 13.03 + X_1\ 15.8 + X_6\ 7.20$	15.79***	.51
III	$y = 16.07 + X_1\ 16.28 + X_2\ -1.52 + X_6\ 7.37$	10.26***	.51
IV	$y = 14.3 + X_1\ 16.2 + X_2\ -1.63 + X_5\ .911 + X_6\ 6.85$	7.48	.51

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 23

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Grammar Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 27.6 + X_1\ 20.8$	16.81	.35
II	$y = 20.0 + X_1\ 16.4 + X_8\ 6.61$	11.71	.43
III	$y = -16.1 + X_1\ 13.4 + X_7\ 6.90 + X_8\ 6.03$	9.56	.49
IV	$y = -13.82 + X_1\ 14.10 + X_2\ -3.24 + X_3\ 7.76 + X_4\ 6.35$	7.71	.50

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 24

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Spelling Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 47.7 + X_{10}\ 9.1$	50.0***	.61
II	$y = 29.5 + X_9\ 3.8 + X_{10}\ 6.6$	33.1***	.68
III	$y = 4.9 + X_1\ 8.9 + X_9\ 4.01 + X_{10}\ 4.9$	26.7	.73
IV	$y = 10.4 + X_1\ 9.8 + X_2\ -2.9 + X_9\ 4.25 + X_{10}\ 4.9$	20.1	.74

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 25 presents the listening and study skills equations. The F values for Step II, III, and IV were significant at the .0001 level. The R^2 coefficients ranged from .35 to .54. Step II added the first listening component and yielded an R^2 or .54. Step III contained a single listening component and two study skills components generating an R^2 of .58. Step IV produced an R^2 of .58.

The fourth grade regression equations for predicting reading achievement from listening and language arts components were calculated on the basis of 36 sets of scores. The equations begin with listening and punctuation.

Table 26 lists the listening and punctuation equations showning that the F values for Step I, II, and III were significant at the .0001 level. Step I contained a punctuation component with an R^2 value of .43. The listening component began with Step II and produced an R^2 of .55. Step III contained a single listening component and two punctuation components to generate an R^2 value of .61. All four components in Step IV gave an R^2 of .62.

Table 27 lists the usage and listening components. All F values were significant at the .0001 level. The listening component began in Step II and generated an R^2 of .65. Step II contained only a single listening component giving an R^2 coefficient of .66. The four component equation generated an R^2 coefficient of .66.

Table 25

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Study Skills Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 61.1 + X_{12}\ 14.88$	16.8	.35
II	$y = 9.52 + X_1\ 16.2 + X_{12}\ 11.58$	18.16***	.54
III	$y = 2.60 + X_1\ 13.2 + X_{11}\ 4.5 + X_{12}\ 9.7$	13.43***	.58
IV	$y = 3.47 + X_1\ 13.3 + X_2\ -.38 + X_{11}\ 4.55 + X_{12}\ 9.7$	9.73***	.58

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 26

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Punctuation Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 54.6 + X_3\ 6.14$	25.7***	.43
II	$y = 5.5 + X_2\ 13.5 + X_3\ 5.9$	20.7***	.55
III	$y = -17.2 + X_2\ 12.23 + X_3\ 4.2 + X_4\ 3.5$	17.36***	.61
IV	$y = -23.7 + X_1\ 1.74 + X_2\ 11.9 + X_3\ 4.2 + X_4\ 3.5$	12.67***	.62

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 27

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Usage Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 42.2 + X_6\ 13.58$	50.4***	.59
II	$y = 12.06 + X_2\ 9.2 + X_6\ 12.6$	31.2***	.65
III	$y = 6.70 + X_2\ 8.32 + X_5\ 2.8 + X_6\ 11.4$	21.1***	.66
IV	$y = 17.9 + X_1\ -3.07 + X_2\ 8.8 + X_5\ 2.81 + X_6\ 11.5$	15.6***	.66

Levels of Significance: * = .05; ** = .01; *** = .0001.

The listening and grammar components presented in Table 28 had a range of R^2 values from .37 to .53 with all the F values reaching significance at the .0001 level. Step II with two grammar components produced an R^2 of .49. Step III with a single listening component generated an R^2 of .53. Step IV produced an R^2 of .53.

Table 29 lists the spelling and listening equations. The listening components appeared in Step II and III and produced R^2 coefficients of .34 and .37, respectively. The four component equation generated an R^2 of .37. The F values were not significant.

The final fourth grade regression equations based on the listening and study skills components are listed in Table 30. All the F values were significant at .0001. The R^2 values ranged from .51 to .59. Step II included a single listening and a single study skills component which gave an R^2 of .58. Step III combined two listening components and a single study skills component to produce an R^2 of .59. Step IV with all four components produced an R^2 of .59.

Listening was combined with each reading component to predict language arts achievement for every grade level. The second grade equations begin with listening and vocabulary. The F values in Table 31 were not significant, and the R^2 values ranged from .017 to .021. Step I and II

Table 28

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Grammar Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 71.5 + X_8\ 10.51$	20.0***	.37
II	$y = 51.07 + X_7\ 6.90 + X_8\ 9.61$	16.28***	.49
III	$y = 26.42 + X_2\ 8.02 + X_7\ 6.1 + X_8\ 8.8$	12.40***	.53
IV	$y = 17.35 + X_1\ 2.43 + X_2\ 7.6 + X_7\ 5.8 + X_8\ 9.08$	9.07***	.53

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 29

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Spelling Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 37.3 + X_{10}\ 9.2$	14.98	.30
II	$y = 11.7 + X_2\ 9.59 + X_{10}\ 7.9$	9.44	.34
III	$y = 9.6 + X_2\ 9.9 + X_9\ 2.67 + X_{10}\ 5.48$	6.50	.37
IV	$y = 12.57 + X_1\ -.79 + X_2\ 10.08 + X_9\ 2.76 + X_{10}\ 3.86$	4.72	.37

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 30

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Study Skills Stepwise Multiple Regression Equations for Predicting Reading Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 68.20 + X_{12}\ 14.5$	35.5***	.51
II	$y = 31.3 + X_2\ 10.6 + X_{12}\ 13.5$	23.4***	.58
III	$y = 18.98 + X_1\ 3.23 + X_2\ 10.01 + X_{12}\ 13.60$	15.40***	.59
IV	$y = 16.6 + X_1\ 3.21\ X_2\ 9.8 + X_{11}\ 1.1 + X_{12}\ 13.36$	11.27***	.59

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 31

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Vocabulary Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 32.6 + X_1\ -1.09$	.57	.017
II	$y = 31.59 + X_1\ -1.19 + X_1\ .41$	.31	.020
III	$y = 32.4 + X_1\ -1.25 + X_2\ .41 + X_{14}\ -\ .09$	.21	.021
IV	$y = 32.4 + X_1\ -1.25 + X_2\ .41 + X_{13}\ .03 + X_{14}\ -.09$	.15	.021

Levels of Significance: * = .05; ** = .01; *** = .0001.

contained the listening component. The R^2 for Step I was .017. The R^2 values for Step II was .020.

Table 32 shows listening and literal specific comprehension. All the F values were significant at the .0001 level with R^2 values ranging from .60 to .67. Step I and II contained the literal specific comprehension components with R^2 values of .60 and .65, respectively. Step III included a single listening component and two literal specific components with an R^2 of .66. The Step IV equation gave an R^2 of .67.

The literal global comprehension and listening components are shown in Table 33. The F value for Step I was significant at the .001 level. The R^2 values ranged from .19 to .22. Step III and IV contain the listening components and each equation produced an R^2 of .22.

Table 34 lists the equations for inferential specific comprehension and listening. All the F values were significant at the .0001 level. The R^2 values extended from .98 to 1.00. Inferential specific comprehension occurred alone in Step I with an R^2 of .98. The equations with a listening component began at Step II and continued through Step IV. The equations with the combined inferential specific and listening components produced R^2 values of 1.00.

Table 35 contains the listening and inferential global comprehension equations. The F values for each equation

Table 32

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 15.5 + X_{16}\ .338$	47.9***	.60
II	$y = 11.71 + X_{15}\ .430 + X_{16}\ .262$	28.04***	.65
III	$y = 18.98 + X_{1}\ -1.08 + X_{15}\ .453 + X_{16}\ .257$	19.5***	.66
IV	$y = 19.9 + X_{1}\ -.98 + X_{2}\ -.42 + X_{15}\ .45 + X_{16}\ .25$	14.30***	.67

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 33

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 16.9 + X_{17}\ 3.14$	7.61***	.19
II	$y = 16.4 + X_{17}\ 2.78 + X_{18}\ .10$	4.05	.21
III	$y = 22.75 + X_{1}\ -.90 + X_{17}\ 2.73 + X_{18}\ .10$	2.80	.22
IV	$y = 22.81 + X_{1}\ -.89 + X_{2}\ -.02 + X_{17}\ .73 + X_{18}\ .106$	2.03	.22

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 34

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = -3.73 + X_{20}\ .984$	.2213***	.98
II	$y = .000 + X_2\ -1.00 + X_{20}\ 1.00$	999999.99***	1.00
III	$y = -.000 + X_1\ 0.000 + X_2\ -1.00 + X_{20}\ 1.00$	999999.99***	1.00
IV	$y = -.000 + X_1\ .000 + X_2\ -1.00\ X_{19}\ -.000 + X_{20}\ 1.00$	999999.99***	1.00

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 35

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 13.3 + X_{22}\ 5.3$	54.9***	.63
II	$y = 12.60 + X_{21}\ .59 + X_{22}\ 5.12$	27.04***	.64
III	$y = 11.69 + X_2\ .23 + X_{21}\ .54 + X_{22}\ 5.14$	17.48***	.64
IV	$y = 12.08 + X_1\ -.064 + X_2\ .247 + X_{21}\ .538 + X_{22}\ 5.13$	12.66***	.64

Levels of Significance: * = .05; ** = .01; *** = .0001.

were significant at the .0001 level. The R^2 values ranged from .63 to .64. Step I and Step II contained the inferential global comprehension components. These two equations produced R^2 coefficients of .63 and .64 in value. The equations which added the listening components continued to produce R^2 coefficients of .64 in value.

Table 36 contains the listening and evaluative comprehension values. No F value was significant. The R^2 values ranged from .059 to .095. The listening components began in Step II and produced an R^2 of .089 to .095.

The regression equations for predicting language arts achievement from the listening and reading components for the third grade begin with Table 37. The first set of components were listening and vocabulary.

Table 37 lists the equations for listening and vocabulary. The listening components began with Step I and II. Listening in Step I gave an R^2 of .21 and an F of 8.46 which was not significant. Step II combined two listening components and produced an R^2 of .26. The accompanying F value did not reach significance. The equations in Step III and IV gave R^2 values of .29 each. The F values were not significant.

Table 38 lists the listening and literal specific comprehension equations. Step I utilized a single literal specific component and produced an R^2 of .55 with an F

Table 36

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Evaluative Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 22.60 + X_{23}\ 2.55$	1.95	.059
II	$y = 32.14 + X_1\ -1.44 + X_{23}\ 2.83$	1.47	.089
III	$y = 31.68 + X_1\ -1.51 + X_{23}\ 2.88 + X_{24}\ .229$	1.01	.094
IV	$y = 32.03 + X_1\ -1.48 + X_2\ -.14 + X_{23}\ 2.92 + X_{24}\ .233$	.74	.095

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 37

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Vocabulary Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 13.57 + X_1\ 3.90$	8.46	.21
II	$y = 9.58 + X_1\ 3.20 + X_2\ 1.78$	5.48	.26
III	$y = 11.44 + X_1\ 3.28 + X_2\ 3.28 + X_{14}\ -.48$	4.06	.29
IV	$y = 11.34 + X_1\ 3.13 + X_2\ 1.94 + X_{13}\ .610 + X_{14}\ -.46$	2.97	.29

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 38

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 10.73 + X_{15}\ .760$	39.33***	.55
II	$y = 9.83 + X_{15}\ .590 + X_{16}\ .129$	24.32***	.61
III	$y = 5.46 + X_{2}\ 1.52 + X_{15}\ .517 + X_{16}\ .140$	18.61***	.65
IV	$y = 5.15 + X_{1}\ .172 + X_{2}\ .172 + X_{15}\ .508 + X_{16}\ .139$	13.49***	.65

Levels of Significance: * = .05; ** = .01; *** = .0001.

coefficient of 39.33 at the .0001 level of significance. Step II combined two literal specific components and produced an R^2 of .61 with an F coefficient of 24.32 at the .0001 level of significance. Step III and IV added the listening and literal comprehension components. Each equation produced an R^2 of .65 with $\underline{F}$ values at the .0001 level of significance.

The equations for literal global comprehension and listening are listed in Table 39. Step I contained a single literal global component with an R^2 of .58 and an $\underline{F}$ value of 44.06 significant at the .0001 level. Step II and III added the listening component. Step II had an R^2 of .63 with an $\underline{F}$ value of 26.21 at .0001 level of significance. Step III produced an R^2 of .65 with an $\underline{F}$ of 18.37 significant at the .0001 level. The R^2 for Step IV was .65. The $\underline{F}$ value was not significant.

Table 40 shows the listening and inferential specific comprehension equations for the third grade. All $\underline{F}$ values were significant at .0001 level with an $\underline{F}$ value of 999999.99 for Step II, III and IV. The R^2 for Step I with a single inferential specific component was .98. Step II with a listening and an inferential specific component produced an R^2 of 1.00. Step III with two listening components and one inferential specific component produced an R^2 of 1.00. The four component equation produced an R^2 of 1.00.

Table 39

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 13.83 + X_{17}\ 4.60$	44.06***	.58
II	$y = 8.56 + X_2\ 1.85 + X_{17}\ 4.32$	26.21***	.63
III	$y = 7.61 + X_2\ 1.55 + X_{17}\ 3.88 + X_{18}\ .111$	18.37***	.65
IV	$y = 6.26 + X_1\ .75 + X_2\ 1.41 + X_{17}\ 3.86 + X_{18}\ .073$	13.55	.65

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 40

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = -1.71 + X_{20}\ .93$	2125.2***	.98
II	$y = 0.000 + X_2\ -1.00 + X_{20}\ 1.00$	999999.99***	1.00
III	$y = 0.000 + X_1\ - .000 + X_2\ - 1.00 + X_{20}\ 1.00$	999999.99***	1.00
IV	$y = .000 + X_1\ - .000 + X_2\ - 1.00 + X_{20}\ 1.00 + X_{19}\ - 1.00$	999999.99***	1.00

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 41 shows the equation for listening and inferential global comprehension. The R^2 coefficients ranged from .74 to .78 in value. Step I contained a single inferential global component with the equation generating an R^2 of .74. Step II added a listening component to the inferential global component to produce an R^2 of .77. Step III contained two inferential global components and a single listening component which generated an R^2 of .78. The final Step gave an R^2 of .78. Each of the four equations produced F values significant at the .0001 level.

Table 42 lists the listening and evaluative comprehension equations. No equation produced a significant F value. The R^2 values ranged from .21 to .35 in value. The Step I equation with one listening component produced an R^2 of .21. The four component equation in Step IV produced an R^2 of .35 in value.

The fourth grade prediction equations for the combination of listening and reading components begin with Table 43. In Table 43, listening was combined with vocabulary components. No F value was significant. The R^2 values ranged from .12 to .153 in value. The first listening component was entered in Step III with an R^2 of .153. The four component equation in Step IV produced an R^2 of .153.

Table 44 shows the literal specific comprehension and listening components. The F values for each equation were

Table 41

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 12.72 + X_{22}\ 5.14$	91.2***	.74
II	$y = 8.77 + X_2\ 1.26 + X_{22}\ 4.89$	51.55**	.77
III	$y = 8.17 + X_2\ 1.32 + X_{21}\ .539 + X_{22}\ 4.44$	34.60***	.78
IV	$y = 8.97 + X_1\ -\ .39 + X_2\ 1.40 + X_{21}\ .56 + X_{22}\ 4.55$	25.28***	.78

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 42

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Evaluative Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 13.57 + X_1\ 3.90$	8.46	.21
II	$y = 14.04 + X_1\ 4.61 + X_{24}\ -\ .725$	5.78	.27
III	$y = 15.29 + X_1\ 3.66 + X_{23}\ 4.4 + X_{24}\ -\ .76$	5.00	.34
IV	$y = 12.63 + X_1\ 3.18 + X_2\ 1.12 + X_{23}\ 4.10 + X_{24}\ -\ .65$	3.93	.35

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 43

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Vocabulary Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 28.54 + X_{13}\ 2.35$	5.00	.12
II	$y = 23.85 + X_2\ 1.43 + X_{13}\ 2.01$	2.87	.14
III	$y = 19.87 + X_1\ 1.04 + X_2\ 1.18 + X_{13}\ 2.14$	1.93	.153
IV	$y = 20.07 + X_1\ 1.06 + X_2\ 1.79 + X_{13}\ 2.12 + X_{14} - .052$	1.41	.153

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 44

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 24.2 + X_{16}\ .238$	13.58	.28
II	$y = 20.4 + X_{15}\ .363 + X_{16}\ .177$	9.90	.37
III	$y = 17.6 + X_2\ .878 + X_{15}\ .373 + X_{16}\ .160$	6.60	.38
IV	$y = 22.30 + X_1 - 1.20 + X_2\ .98 + X_{15}\ .355 + X_{16}\ .175$	4.94	.38

Levels of Significance: * = .05; ** = .01; *** = .0001.

not significant. The range of R^2 values extended from .28 to .38 in value. The first listening component was added in Step III with the equation producing an R^2 of .38. Step IV equation also produced an R^2 of .38.

The literal global comprehension and listening component are listed in Table 45. The F values for each equation were not significant. The range of R^2 values extended from .32 to .38 in value. Step I with a single literal global comprehension component produced an R^2 of .32. The listening component began with Step II. Step I with one listening and one literal global component produced an R^2 of .35. Step III contained a single listening component and two literal global components producing an R^2 of .37. Step IV produced an R^2 of .38.

Table 46 lists the listening and inferential specific comprehension values. Step I with a single inferential specific components produced an F of 3534.48 significant at the .0001 level and an R^2 of .99. Step II with a listening and an inferential specific component produced an F of 999999.99 at the .0001 level of significance with an R^2 of 1.00. Step III combined two listening components and a single inferential specific comprehension component to produce an F of 999999.999 at the .0001 level of significance with an R^2 of 1.00. Step IV was identical in components and coefficients to Step III.

Table 45

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Literal Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 23.26 + X_{18}\ 23.2$	16.16	.32
II	$y = 11.36 + X_1\ 2.50 + X_{18}\ .44$	9.14	.35
III	$y = 9.96 + X_1\ 2.31 + X_{17}\ .443 + X_{18}\ .412$	6.40	.37
IV	$y = 9.00 + X_1\ 2.01 + X_2\ .75 + X_{17}\ .42 + X_{18}\ .39$	4.75	.38

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 46

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Specific Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = -2.45 + X_{20}\ .96$	3534.48***	.99
II	$y = .000 + X_2 - 1.00 + X_{20}\ 1.00$	999999.99***	1.00
III	$y = -.000 + X_1\ .000 + X_2 - 1.00 + X_{20}\ 1.00$	999999.99***	1.00
IV	$y = -.000 + X_1\ .000 + X_2 - 1.00 + X_{20}\ 1.00$	999999.99***	1.00

Levels of Significance: * = .05; ** = .01; *** = .0001.

Inferential global comprehension and listening are the components listed in Table 47. All the F values were significant at the .0001 level. The R^2 values ranged from .55 to .57 in value. Step I included a single inferential global component which produced an R^2 coefficient of .56. Step III added a single listening component to the inferential global comprehension components to produce an R^2 coefficient of .57. Step IV produced an R^2 coefficient of .57 which was generated from the four listening and inferential global comprehension components.

The equations with listening and evaluative comprehension components are detailed in Table 48. The F values for listening and evaluative comprehension were not significant at the notable levels. The R^2 coefficients ranged from .20 to .29 in value. Step I and II used only the evaluative comprehension component. Step III combined a single listening component and two evaluative comprehension components generating an R^2 coefficient of .28. Step IV with all four components produced an R^2 of .29.

Research Question II--Pearson-Product Moment Correlation

Research Question II was designed to locate the reading and language arts component having the greatest relationship with listening comprehension. The Pearson-Product Moment

Table 47

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Inferential Global Comprehension Stepwise Multiple Regression Equations for Predicting Language Art Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 18.3 + X_{22}\ 5.03$	42.46***	.55
II	$y = 18.02 + X_{21} - .45 + X_{22}\ 5.58$	21.12***	.56
III	$y = 23.8 + X_1 - 1.43 + X_{21} -.69 + X_{22}\ 5.99$	14.21***	.57
IV	$y = 23.1 + X_1 - 1.53 + X_2\ .37 + X_{21} - .68 + X_{22}\ 5.91$	10.38***	.57

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 48

The November 1982 Form JS and the February 1983 Form KS MAT Listening and Evaluative Comprehension Stepwise Multiple Regression Equations for Predicting Language Arts Achievement for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Step		F	R^2
I	$y = 27.20 + X_{23}\ 3.92$	9.00	.20
II	$y = 24.25 + X_{23}\ 3.68 + X_{24}\ .703$	5.50	.25
III	$y = 18.031 + X_2\ 1.77 + X_{23}\ 3.47 + X_{24}\ .672$	4.22	.28
IV	$y = 12.13 + X_1\ 1.42 + X_2\ 1.49 + X_{23}\ 3.49 + X_{24}\ .790$	3.22	.29

Levels of Significance: * = .05; ** = .01; *** = .0001.

Correlation was computed for the Form JS and Form KS measures based on the total set of 102 scores and for each series of grade level scores. The value of the Pearson-Product Moment Correlation was expressed as a coefficient in the form of a decimal fraction ranged from a -1 to +1. The magnitude of the relationship was described according to the value designations: negligible, low, moderate, substantial, and very high.

The initial set of correlations was computed for the set of 102 scores. Table 49 contains the Form JS correlation coefficients for listening and the language arts components. Punctuation showed a moderate negative correlation with listening comprehension at the .0001 level of significance with a correlation of .41. Study skills showed a moderate negative correlation having a coefficient of .45 at the .0001 level of significance. Usage was moderately related to listening with a negative coefficient of .38. The spelling coefficient of negative 126 indicated a low relationship with listening. Grammar was negligibly correlated with listening having a coefficient of negative .05.

The Form JS correlations for listening and reading are shown in Table 50. These correlation coefficients were calculated for the set of 102 scores. Inferential specific comprehension was moderately correlated with listening with

Table 49

The November 1982 Form JS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	-.41
Usage	-.38
Grammar	-.05
Spelling	-.26
Study Skills	-.45

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 50

The November 1982 Form JS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	-.28
Literal specific	-.23
Literal global	-.20
Inferential specific	0.48
Inferential Global	-.19
Evaluative	0.09

Levels of Significance: * = .05; ** = .01; *** = .0001.

a coefficient of .48. The coefficient for vocabulary was .28 indicating a low negative relationship. The coefficient for literal specific comprehension was .20 indicating a low negative correlation with listening. Inferential global comprehension was related to listening with a low negative coefficient of .19. Evaluative comprehension was negligibly related to listening with a correlation coefficient of .09. The coefficient for inferential specific comprehension was the only reading component reaching a notable level of significance.

Table 51 presents the Form KS correlations for listening and the language arts components. The entire set of values fell within the negligible to low range of relationships with listening. The punctuation coefficient was .005. The coefficient for usage was .15. The grammar coefficient showed the greatest degree of correlation with listening by producing a coefficient of .24. The spelling coefficient was .07. The coefficient for study skills was .13. All coefficients were positive for the language arts components. No correlations were found to be significant at .05, .01, or .0001.

Table 52 lists the Form KS correlations for listening and the reading components based on a set of 102 scores. The correlation coefficients indicated that the relationship between listening and the Form KS reading components was

Table 51

The February 1983 Form KS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	.005
Usage	.15
Grammar	.24
Spelling	.07
Study Skills	.13

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 52

The February 1983 Form KS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	.004
Literal specific	.13
Literal global	.05
Inferential specific	.24
Inferential global	.11
Evaluative	-.01

Levels of Significance: * = .05; ** = .01; *** = .0001.

within the negligible to low range of relationships. The vocabulary coefficient was .004. The coefficient for literal specific comprehension was .13 showing a low positive relationship. Literal global comprehension fell within the negligible range with a coefficient of .05. Inferential specific comprehension was within the low positive range of correlations with a coefficient of .24. Inferential global comprehension produced a coefficient of .11 showing a low positive relationship. Evaluative comprehension produced a negative coefficient of .01 indicating a negligible correlation with listening comprehension.

Table 53 presents the second grade Form JS correlations for listening and the language arts components obtained from 33 sets of scores. The coefficients for the language arts components were predominantly within the negative range. The levels of significance did not reach .05, .01, or .001. The punctuation coefficient was .10 indicating a low negative relationship with listening. The usage coefficient was .12 indicating a low positive relationship. The grammar coefficient was .36 demonstrating a moderate positive relationship with listening. The spelling coefficient was .24 showing a low negative relationship with listening. The study skills coefficient was .16 demonstrating a low negative with listening.

Table 53

The November 1982 Form JS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	-.108
Usage	.12
Grammar	-.36
Spelling	-.24
Study Skills	-.16

Levels of Significance: * = .05; ** = .01; *** = .0001.

The second grade Form KS correlations for listening and the language arts components are listed in Table 54. The Form KS correlation coefficients for the language arts components fell within the range of negligible relationship with the values ranging from -.005 to +.09. The punctuation coefficient was .05. The usage coefficient was -.005. Grammar produced a coefficient of .07. Spelling produced a coefficient of -.09. The study skills coefficient was .03. The notable levels of significance were not attained.

Table 55 presents the second grade Form JS correlations for listening and the reading components. The reading components tended to be characterized by coefficients falling into the low to negligible range of correlation with listening comprehension. Vocabulary was correlated with listening with a low positive coefficient of .15. Literal specific comprehension produced a negligible positive relationship of .04. The correlation coefficient for literal global comprehension was .06 indicating the existence of a negligible negative relationship. The inferential specific comprehension correlation coefficient was .07 indicating a negligible positive relationship. The correlation coefficient for inferential global comprehension was -.08 showing its relationship with listening to be negligible. The coefficient of .15 indicated the correlation between evaluative comprehension and listening to be a low positive correlation.

Table 54

The February 1983 Form KS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	.05
Usage	-.005
Grammar	.074
Spelling	-.09
Study Skills	.03

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 55

The November 1982 Form JS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	.15
Literal specific comprehension	.04
Literal global comprehension	-.06
Inferential specific	.07
Inferential global	-.08
Evaluative	.15

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 56 lists the second grade Form KS correlations for listening and the reading component. The Form KS correlations were comparable to the Form JS coefficients in terms of value and degree of relationships. The coefficients were predominantly positive with the exception of vocabulary and inferential global comprehension. The correlation coefficient for vocabulary was .04 indicating only a negligible relationship. The literal specific comprehension coefficients was .10 indicating a low positive correlation. The literal global comprehension coefficient was .05 showing only a negligible relationship with listening. The correlation coefficient for inferential specific comprehension was .12 indicating a low positive correlation. The coefficient for inferential global comprehension was -.03 showing a very negligible degree of relationship. The coefficient for evaluative comprehension was .09 falling within the negligible positive range. Notable levels of significance were not reached.

Table 57 presents the third grade Form JS correlations for listening and the language arts components based on sets of 33 scores. The third grade language arts Form JS correlation coefficients were positive in value for each component. The coefficient for punctuation was .34 indicating a moderate positive relationship at the .05 level of significance. The correlation coefficient for usage was .23

Table 56

The February 1983 Form KS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	-.04
Literal specific	.10
Literal global	.05
Inferential specific	.12
Inferential global	-.03
Evaluative	.09

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 57

The November 1982 Form JS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	.34*
Usage	.23
Grammar	.36
Spelling	.30
Study Skills	.47

Levels of Significance: * = .05; ** = .01; *** = .0001.

showing a low positive relationship with listening. The correlation coefficient for grammar was a moderate positive .36. The spelling correlation coefficient was .30 showing the presence of a moderate positive relationship. The study skills correlation of .47 indicated a moderate positive correlation.

Table 58 presents the third grade Form KS correlations for listening and the language arts components. The Form KS correlations were positive in value. The notable levels of significance were not reached. The correlation coefficient for punctuation was .31 indicating a moderate positive correlation. The usage coefficient was .29 falling into the low positive range of relationship. The grammar coefficient was .28 indicating a low positive relationship with listening. The spelling coefficient was .29 showing a low positive correlation. The coefficient for study skills was .18 demonstrating a low positive correlation with listening.

Table 59 lists the third grade Form JS correlations for listening and the reading components. The values of the coefficients were positive. The vocabulary correlation coefficient was .37 indicating a moderate positive relationship. The literal specific comprehension coefficient was .52 indicating the existence of a substantial relationship. The coefficient for literal global comprehension was .37 demonstrating a moderate positive relationship with

Table 58

The February 1983 Form KS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	.31
Usage	.29
Grammar	.28
Spelling	.29
Study Skills	.18

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 59

The November 1982 Form JS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	.37
Literal specific	.52
Literal global	.37
Inferential specific	.52
Inferential global	.39
Evaluative	.42*

Levels of Significance: * = .05; ** = .01; *** = .0001.

listening. The inferential specific comprehension coefficient of .52 indicated a substantial positive relationship. The coefficient for inferential global comprehension was .39 showing a moderate positive with listening. The evaluative comprehension coefficient was .42 indicating a moderate positive correlation at the .01 level of significance.

Table 60 details the third grade Form KS correlations for listening and the reading components. With the exception of evaluative comprehension, the Form KS reading correlation coefficients were positive. The coefficients did not reach the notable levels of significance. The vocabulary coefficient was .15 indicating a low positive relationship. The correlation coefficient for literal specific comprehension was .07 demonstrating a negligible positive correlation. The literal global correlation coefficient was .17 showing a low positive relationship with listening. The inferential specific comprehension coefficient was .48 demonstrating a moderate positive relationship. Evaluative comprehension produced a .13 correlation coefficient indicating a low negative relationship.

Table 61 presents the fourth grade Form JS correlations for listening and the language arts components based on sets of 36 scores. The Form JS language arts correlation coefficients for each component were positive. The

Table 60

The February 1983 Form KS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	.15
Literal specific	.07
Literal global	.17
Inferential specific	.48
Inferential global	.24
Evaluative	-.13

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 61

The November 1982 Form JS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	.01
Usage	.13
Grammar	.37
Spelling	.24
Study Skills	.04

Levels of Significance: * = .05; ** = .01; *** = .0001.

coefficients did not reach notable levels of significance. The coefficient for punctuation was .01 showing a negligible positive relationship with listening. The usage correlation coefficient was .13 indicating a low positive correlation with listening. The correlation coefficient for grammar was .37 demonstrating a moderate positive relationship. The spelling coefficient was .24 showing a low positive correlation. The coefficient for study skills was .04 indicating a negligible positive relationship with listening.

Table 62 lists the fourth grade Form KS correlations for listening and the language arts components. The correlation coefficients fell within the positive range of values. The notable levels of significance were not reached for any language component. The coefficient for punctuation was .14 showing a low positive relationship. The usage correlation coefficient was .21 indicating a low positive relationship with listening. The grammar coefficient was .22 demonstrating a low positive relationship with listening. The correlation coefficient for spelling was .30 indicating the presence of a moderate positive relationship. The coefficient of .17 for study skills indicated a low positive relationship with listening.

Table 63 lists the fourth grade Form JS correlation for listening and the reading components. With the exception of literal global comprehension, the reading components

Table 62

The February 1983 Form KS MAT Listening and Language Arts Pearson-Product Moment Correlation Coefficients for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Language arts components	r
Punctuation	.14
Usage	.21
Grammar	.22
Spelling	.30
Study Skills	.17

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 63

The November 1982 Form JS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	-.14
Literal specific	-.01
Literal global	.04
Inferential specific	-.18
Inferential global	-.13
Evaluative	-.03

Levels of Significance: * = .05; ** = .01; *** = .0001.

produced coefficients which were negative. The notable levels of significance were not reached for any reading and language arts component. The correlation coefficient for vocabulary was .14 indicating a low negative relationship. The negative coefficient of .06 indicated that literal specific comprehension was within the negligible range of relationships with listening. Literal global comprehension produced a correlation of .04 showing a negligible positive relationship. The correlation of .18 for inferential specific comprehension indicated a low negative correlation with listening. The correlation coefficient for inferential global comprehension was .13 showing a low negative relationship. The negative coefficient of .03 for evaluative comprehension demonstrated a negligible correlation with listening.

Table 64 reports the fourth grade Form KS correlations for listening and the reading components. With the exception of the vocabulary component, the reading correlations were within the positive limits. The correlation coefficient for vocabulary was -.03 indicating a negligible correlation with listening. The correlation coefficient for literal specific comprehension was .38 showing a moderate positive relationship. The coefficient of .21 for literal global comprehension was indicative of a low positive relationship. The correlation coefficient for inferential

Table 64

The February 1983 Form KS MAT Listening and Reading Pearson-Product Moment Correlation Coefficients for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

Reading components	r
Vocabulary	-.03
Literal specific	0.38
Literal global	0.21
Inferential specific	0.34
Inferential global	0.31
Evaluative	0.06

Levels of Significance: * = .05; ** = .01; *** = .0001.

specific comprehension was .34 demonstrating a moderate positive relationship. Inferential global comprehension was moderately correlated with listening through a positive coefficient of .31. The correlation coefficient for evaluative comprehension was .06 indicating a negligible positive relationship.

Research Question III--The Paired Differences T-Test

Research Question III used the Paired Differences T-Test to determine if the scores and correlational relationships from the reading and language arts components from Form JS and Form KS remained stable or changed significantly over the interim of three months between the dates of test administration.

Table 65 lists the reading and language arts components, the t-values, and the levels of significance for the total test group. The t-value for listening was -7.28 with a significance level of .0001. Punctuation produced a t-value of 10.14 at the .0001 level of significance. The t-value for usage was 2.12. Grammar produced a t-value of -2.87. The t-value for spelling was -4.11 at the .0001 level of significance. The t-value for study skills was -1.98 at the .05 level of significance.

All the t-values for the reading components were positive. Vocabulary, literal specific comprehension,

Table 65

The November 1982 Form JS and the February 1983 Form KS MAT Paired Differences t-Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	t
Total language arts	
Listening	-7.28***
Punctuation	10.14***
Usage	2.12
Grammar	-2.87
Spelling	-4.11***
Study Skills	-1.98*
Total reading	
Vocabulary	11.86***
Literal specific	10.14***
Literal global	4.15***
Inferential specific	32.09***
Inferential global	0.22
Evaluative	11.77***

Levels of Significance: * = .05; ** = .01; *** = .0001.

literal global comprehension, inferential specific comprehension, and evaluative comprehension were significant at the .0001 level. The t-value for vocabulary was 11.86. Literal specific comprehension produced a t-value of 10.11. Literal global comprehension gave a t-value of 4.05. The t-value for inferential specific comprehension was 32.09. Inferential global comprehension produced a t-value of 0.22. The t-value for evaluative comprehension was 11.77.

Table 66 lists the language arts and reading components for the second grade with a student N of 33. The t-value for listening was -12.41 at the .0001 level of significance. Punctuation produced a t of 6.00 at the .0001 level of significance. The t-value for usage was 5.29 at the .0001 level of significance. Grammar produced a t-value of .99 which was not significant. The t-value for spelling was -2.59 and was not significant.

The reading t-values were positive. Inferential global comprehension failed to be significant. Vocabulary, literal specific comprehension, literal global comprehension, inferential specific comprehension, and evaluative comprehension were significant at the .0001 level. The t-value for vocabulary was 8.36. Literal specific comprehension produced a t-value of 5.11. Literal global comprehension yielded a t-value of 6.03. The t-value for inferential comprehension was 20.36. Inferential global comprehension

Table 66

The November 1982 Form JS and the February 1983 Form KS MAT Paired Differences t-Test for the Second Grade Participants of the Johnson County School System, Mountain City, Tennessee

	t
Language arts	
Listening	-12.41***
Punctuation	6.00***
Usage	5.25***
Grammar	0.99
Spelling	-2.59
Study Skills	3.36
Reading	
Vocabulary	8.36***
Literal specific	5.11***
Literal global	6.03***
Inferential specific	20.36***
Inferential global	0.74
Evaluative	5.93***

Levels of Significance: * = .05; ** = .01; *** = .0001.

produced a t-value of .74. Evaluative comprehension gave a t-value of 5.93.

Table 67 lists the Paired Differences t-values for the third grade. Among the language arts components, punctuation, grammar, study skills, and spelling produced calculated t-values at the .0001 level of significance. Listening, usage, grammar, spelling, and study skills fell into the negative range. The t-value for listening was -.44. Punctuation produced a t-value of 7.00. The usage component gave a t-value of -1.15. The t-value for grammar was -11.29. The spelling t-value was -5.54. The t-value for study skills was -7.96.

The reading components were within the positive range and significant at the .0001 level with the exception of inferential global comprehension which gave a t-value of -1.09 and was not significant. The t-value for vocabulary was 9.41. Literal specific comprehension produced a t-value of 5.37. Literal global comprehension produced a t-value of 11.12. The t-value for inferential specific comprehension was 21.54. Evaluative comprehension produced a t-value of 7.59.

Table 68 shows the Paired Differences t-values for the fourth grade reading and language arts components computed for a set of 36 scores. Listening produced a t-value -4.02 which was not significant. The t-value for punctuation was

Table 67

The November 1982 Form JS and the February 1983 Form KS MAT Paired Differences t-Test for the Third Grade Participants of the Johnson County School System, Mountain City, Tennessee

	t
Language arts	
Listening	-.44
Punctuation	7.00***
Usage	-1.15
Grammar	11.29***
Spelling	-5.54***
Study Skills	-7.96***
Reading	
Vocabulary	9.41***
Literal specific	5.37***
Literal global	11.12***
Inferential specific	21.54***
Inferential global	-1.09
Evaluative	7.59***

Levels of Significance: * = .05; ** = .01; *** = .0001.

Table 68

The November 1982 Form JS and the February 1983 Form KS MAT Paired Differences t-Test for the Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	t
Language arts	
Listening	-4.02
Punctuation	5.22***
Usage	-0.77
Grammar	1.47
Spelling	1.31
Study Skills	-0.79
Reading	
Vocabulary	4.41***
Literal specific	7.12***
Literal global	9.10***
Inferential specific	22.76***
Inferential global	.63
Evaluative	6.83***

Levels of Significance: * = .05; ** = .01; *** = .0001.

significant at the .0001 level with a t-value of 5.22. The t-value for usage was -.77 and was not significant. The t-value for grammar was 1.47 and was not significant. The t-value of -.79 for study skills was not significant. The t-value of 1.31 was not significant for the spelling variable.

The t-values for reading fell within the positive range. The t-value of 4.41 was significant at .0001 for vocabulary. The t-value of 7.12 was significant at the .0001 level for literal specific comprehension. Literal global comprehension produced a t-value of 9.10 at the .0001 level of significance. The t-value of 22.76 for inferential specific comprehension was significant at the .0001 level. The t-value of .63 for inferential global comprehension was not significant. The t-value for evaluative comprehension was 6.83 at the .0001 level of significance.

The Run's Test

The Run's Test was calculated for each grade level using the Form JS and Form KS reading and language arts components. In order to determine if the Run's values met the assumption of random occurrence in the spread of scores, the Run's coefficient was compared to ±1.96. Those values to the extreme of ±1.96 indicated that the scores could not be attributed to a random factor.

Table 69 presents the Run's coefficients for the listening components from Form JS and Form KS data according to grade level. The second grade level Form JS and Form KS Run's coefficients were not significant. The fourth grade Form JS coefficient was 3.00. The third grade coefficient was 2.35.

Table 70 contains the punctuation Run's coefficients for Form JS and Form KS data. No Run's coefficient exceeded ±1.96.

Table 71 displays the Run's coefficient for usage. At the second grade level, the Form JS and Form KS coefficients exceeded ±1.96 with values of 3.00 and 3.17. The Form KS coefficient for the third grade was 3.44. The Form JS coefficient for grade four was 2.69 followed by a Form KS coefficient of 1.21.

Table 72 shows the Run's coefficients for grammar. The coefficient for the grade two, Form JS was 1.78 followed by a Form KS coefficient of 1.62. For grade three the Form JS coefficient was 1.93 followed by a Form KS coefficient of 2.10. The fourth grade Form JS coefficient was .259 followed by the Form KS coefficient of 1.49.

The Run's coefficients for spelling are listed in Table 73. At the second grade level, the Form JS coefficient was 1.21 accompanied by the Form KS coefficient of -1.00. Both third grade coefficients were not significant

Table 69

The November 1982 Form JS and the February 1983 Form KS MAT Listening Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	1.82	1.07
Grade 3	1.93	2.35*
Grade 4	3.00*	1.75

Level of Significance: >1.96.

Table 70

The November 1982 Form JS and the February 1983 Form KS MAT Punctuation Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	.827	1.39
Grade 3	2.5*	1.26
Grade 4	-.634	.205

Level of Significance: >1.96.

Table 71

The November 1982 Form JS and the February 1983 Form KS MAT Usage Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	3.00*	3.17*
Grade 3	.631	3.44*
Grade 4	2.69*	1.21

Level of Significance: >1.96.

Table 72

The November 1982 Form JS and the February 1983 Form KS MAT Grammar Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	1.78	1.62
Grade 3	1.93	2.10*
Grade 4	.259	1.49

Level of Significance: >1.96.

Table 73

The November 1982 Form JS and the February 1983 Form KS MAT Spelling Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	1.21	-1.00
Grade 3	.224	.667
Grade 4	2.02*	2.89*

Level of Significance: >1.96.

with a Form JS Run's coefficient of .224 and a Form KS coefficient of .667. At the fourth grade level, the Form JS coefficient was 2.02, and the Form KS coefficient was 2.89.

The study skills Run's coefficient in Table 74 showed that the Form JS and Form KS data were significant with the exception of the third grade Form JS. The second grade coefficients were 2.13 and 2.13. At the third grade level, the Form JS value was 1.03 followed by a coefficient of 2.14. The fourth grade coefficients were 3.94 for the Form JS and 3.02 for Form KS.

Table 75 shows the vocabulary Run's Test. At the second grade level, the Form JS and Form KS coefficients were 0. For the third grade level, the Form JS coefficient was 2.72, and the Form KS coefficient was -.059. The Form JS coefficient for grade four was 4.26 accompanied by a Form KS coefficient of .850.

Table 76 lists the literal specific comprehension Run's coefficients. At the second grade level, the Form JS coefficient was .696 followed by a Form KS coefficient of -.136. The Form JS coefficient for the third grade was .192 followed by the Form KS value of .023. At the fourth grade level, the Form JS value was .107, and the Form KS value was 3.01.

Table 77 shows the literal global comprehension Run's values. At the second grade level, the Form JS value was

Table 74

The November 1982 Form JS and the February 1983 Form KS MAT Study Skills Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	2.13*	2.13*
Grade 3	1.03	2.14*
Grade 4	3.94*	3.02*

Level of Significance: >1.96.

Table 75

The November 1982 Form JS and the February 1983 Form KS MAT Vocabulary Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	0	0
Grade 3	2.72*	0.059
Grade 4	4.26*	.850

Level of Significance: >1.96.

Table 76

The November 1982 Form JS and the February 1983 Form KS MAT Literal Specific Comprehension Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	.696	-1.36
Grade 3	.192	.023
Grade 4	.107	3.01*

Level of Significance: >1.96.

Table 77

The November 1982 Form JS and the February 1983 Form KS MAT Literal Global Comprehension Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	8.10*	.497
Grade 3	3.46*	2.57*
Grade 4	6.62*	2.32*

Level of Significance: >1.96.

8.10 followed by a Form KS value of .497. The value for the third grade Form JS was 3.46 accompanied by a Form KS value of 2.57. At the fourth grade level, the Form JS value was 6.62 followed by a Form KS value of 2.32.

Table 78 illustrates the Run's values for inferential specific comprehension. At the second grade level, the Form JS value was 1.83 followed by a Form KS value of -.472. The value for the third grade Form JS was .667 accompanied by a Form KS value of .504. At the fourth grade level, the Form JS value was .399 followed by a Form KS value of 1.06.

Table 79 displays the Run's values for inferential global comprehension. At the second grade level, the Form JS value was 3.61 followed by a Form KS value of 1.20. The third grade Form JS was .667, and the Form KS value was 2.55. The fourth grade Form JS value was .888 accompanied by a Form KS value of 1.11.

Table 80 shows the Run's values for evaluative comprehension. At the second and third grade levels, the Form JS and Form KS values were 0. At the fourth grade level, the Form JS value was .560. The fourth grade Form KS value was 1.62.

Summary

Comparison of the Form JS and Form KS measures of central tendency for the total set of scores showed

Table 78

The November 1982 Form JS and the February 1983 Form KS MAT Inferential Specific Comprehension Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	1.83	-.472
Grade 3	.667	.504
Grade 4	.399	1.06

Level of Significance: >1.96.

Table 79

The November 1982 Form JS and the February 1983 Form KS MAT Inferential Global Comprehension Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	3.61*	1.20
Grade 3	.667	2.55*
Grade 4	.888	1.11

Level of Significance: >1.96.

Table 80

The November 1982 Form JS and the February 1983 Form KS MAT Evaluative Comprehension Run's Test for the Second, Third, and Fourth Grade Participants of the Johnson County School System, Mountain City, Tennessee

	Form JS	Form KS
Grade 2	0	0
Grade 3	0	0
Grade 4	.560	1.62

Level of Significance: >1.96.

substantial differences for each reading component. Examination of the language arts components did not indicate moderate increases or decreases in the measures of central tendency for the total set of scores. Analysis of the grade level measures of central tendency indicated that variations did occur in the means for the reading and language arts data. However, the range and magnitude of the means across grade levels did not show any extreme values in favor of either the Form JS or Form KS data.

Stepwise Multiple Regression analysis was used to assess the usefulness and applicability of listening comprehension as a predictive tool for determining reading and language arts achievement at the lower elementary levels. Consideration of all regression equations led to the determination that listening comprehension would not be the single optimum predictor of either reading or language arts achievement. From an overall perspective, other language arts and reading components such as spelling, punctuation, study skills, inferential specific comprehension, and inferential global comprehension tended to emerge as substantial predictors.

Inferential specific comprehension was consistently the most plausible predictor of language arts achievement. Listening comprehension and inferential specific comprehension appeared to be the most effective set of predictors

when operating conjointly. In the prediction of reading achievement, listening comprehension was secondary to spelling, punctuation, study skills, and usage.

Pearson-Product Correlation Analysis was used to locate the Form JS and Form KS reading and language arts components most related to listening comprehension. Consideration of all the correlational data revealed that the relationships between listening and the individual components of reading and language arts tended to change rather than remain stable over the interim period of three months between the dates of test administration. Examination of the total set of language arts scores led to the determination that the Form JS language arts component most related to listening comprehension was study skills. Grammar was the Form KS language arts component most related to listening comprehension. The Form JS reading component most related to listening was inferential specific comprehension. Literal specific comprehension was the Form KS reading component most related to listening comprehension.

At the second grade level, the Form JS language arts component most related to listening comprehension was grammar. The Form KS language arts components fell within a range of negligible relationships. The Form JS reading components most related to listening comprehension were vocabulary and evaluative comprehension. Inferential

specific comprehension was the Form KS reading component most related to listening comprehension.

At the third grade level, the Form JS language arts component most related to listening comprehension was study skills. Punctuation was the Form KS language component showing the greatest relationship to listening comprehension. Literal specific comprehension and inferential specific comprehension were the Form JS reading components most related to listening comprehension. Inferential specific comprehension was the Form KS reading component showing the greatest relationship to listening comprehension.

At the fourth grade level, the Form JS language arts component most related to listening comprehension was grammar. Spelling was the Form KS language arts component most related to listening comprehension. The Form JS reading components produced low to negligible relationships. Inferential specific comprehension was the reading component most related to listening comprehension. Literal specific comprehension was the Form KS reading component most related to listening comprehension.

The *t*-test for the entire sets of 102 scores and for the grade level scores indicated that the reading and language arts components did not remain stable over the three month interim between dates of testing and that

significant changes did occur for certain components. The t-tests for the 102 set of scores indicated that change had occurred in favor of Form KS. Inferential global comprehension remained in a static position. The listening, grammar, spelling, and study skills t values were negative indications of a regressive tendency for these language arts components. Usage and punctuation did show significant change toward Form KS.

At the second grade level, the reading components with the exception of inferential global comprehension, showed change attributable to Form KS. Among the language arts components, grammar was stable; listening and spelling tended to show a regressive tendency toward Form KS; and, punctuation, usage, and study skills showed positive change.

At the third grade level, the reading components tended to indicate the occurrence of significant positive change directed toward Form KS. However, inferential global comprehension tended to regress in the direction of Form JS. Among the language arts components only punctuation and grammar showed the occurrence of positive change.

The fourth grade level reading components showed change directed toward Form KS. Among the language components, only punctuation showed positive change. Listening, usage, and study skills tended to regress toward Form JS.

The values for the Run's Test tended to fall between -1.96 and +1.96. Those values in excess of 1.96 indicated that the scores fell above or below the median and were not attributable to a random element. In the instance of the vocabulary and evaluative comprehension components, the maximum score was either 1 or 2, and the most prevalent score across the grade levels was 0. Subsequently, the run of scores was attributable to the repetition of a single score such as 0.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V contains a summary of the investigation, a listing of the findings, conclusions, and recommendations for further research. The organizational plan of the chapter follows the stated topics.

Summary

The ability to understand and apply verbal communication represents the foundation for language competence. In the lower elementary levels, listening ability is one basis for achievement in reading and the language arts. The major purpose of this investigation was to determine the usefulness and applicability of listening comprehension as a tool for predicting reading and language arts achievement at the lower elementary levels. A secondary purpose was to determine which reading and language arts components were most closely related to listening comprehension. An additional purpose was to investigate the stability of the correlations between listening and the reading and language arts components over an interval of three months. The investigation considered the following research questions:

1. What is the usefulness and applicability of the listening comprehension component of a standardized test as a predictive tool for determining reading and language arts achievement in the lower elementary grades?
2. What reading and language arts components have the highest degree of relationship to listening comprehension?
3. Did the reading and language arts scores from Form JS and Form KS remain stable or did significant differences occur between the dates of test administration?

The test instrument was The Metropolitan Achievement Test-Survey Battery which included the Primary I, Primary II, and Elementary levels of Form JS and Form KS. Parallel forms of the test were used to: (1) provide two sets of raw score data for use in the regression analysis for predicting reading and language arts achievement, and (2) determine if the raw scores and the correlational relationships for the reading and language arts components would remain stable or change over a three month interval.

Form JS was administered in November 1982; Form KS was administered in February 1983. The reading and language arts strands were the only test components pertinent to the research questions. Therefore, no other test strands were

administered. The language arts strand covered elements of the language arts curriculum devoted to listening, usage, grammar, spelling, and study skills. The reading strand was concerned with comprehension at the literal, inferential, and evaluative level.

The Primary I level was appropriate for the second grade students. Primary II level was designed for the third grade students. The Elementary level was appropriate for the fourth grade students.

The available student participants for the study were taken from the second, third, and fourth grade classes within the Shouns Elementary School located in Mountain City, Tennessee. The test group was composed of 102 students averaging in age from 7.7 years to 9.6 years. There were 42 females and 60 males in the test group. The second and third grade groups were composed of 33 students. The fourth grade group was composed of 36 students.

Stepwise Multiple Regression Analysis was used with Research Question I to determine the usefulness and applicability of listening comprehension as a predictive tool for reading and language arts achievement. Pearson-Product Moment Correlation Analysis was used with Research Question II to identify the reading and language arts components most closely related to listening.

The Paired Differences t-Test was used with Research Question III to determine if the reading and language arts raw scores from Form JS and Form KS along with the correlation coefficients remained stable or changed during the interim between the dates of test administration. A Run's Test was used with each reading and language arts component from Form JS and Form KS to determine if the occurrence of scores could be attributed to a random element or to an individual score.

Findings

The findings relative to Research Question I as determined through Stepwise Multiple Regression were:

1. The analysis revealed that a listening component from a standardized achievement test was not the single best predictor of either reading or language arts achievement.
2. Language arts components such as punctuation, spelling, and study skills were found to be more instrumental in predicting reading achievement than listening comprehension?
3. Reading components such as inferential specific comprehension, inferential global comprehension, literal specific comprehension, and literal global comprehension were found to be substantial predictors of language arts achievement.

4. Inferential specific comprehension was found to be the optimum predictor of language arts achievement.

The findings relative to Research Question II as determined through the Pearson-Product Correlation Analysis were:

1. Consideration of the total set of scores demonstrated that study skills and grammar were the language arts components most related to listening comprehension.
2. Inferential specific comprehension and literal specific comprehension were the reading components most related to listening comprehension for the total set of scores.
3. Across the grade levels, inferential specific comprehension and literal specific comprehension tended to be the reading components most related to listening comprehension.
4. The language arts components from Form JS and Form KS most related to listening comprehension were grammar, punctuation, and spelling.
5. The third grade Form JS language arts component most related to listening comprehension was study skills.
6. The third grade Form KS language arts component most related to listening comprehension was punctuation.

7. At the second and fourth grade levels, the language arts component for Form JS most related to listening comprehension was grammar.
8. The second grade Form KS language arts components showed only a negligible relationship to listening comprehension.
9. At the fourth grade level, the language arts component from Form KS most related to listening comprehension was spelling.
10. At the second grade level, the Form JS and Form KS reading components revealed only low to negligible relationships with listening comprehension.
11. At the third and fourth grade levels, the Form JS and Form KS reading component most related to listening comprehension was inferential specific comprehension.
12. Across the grade levels and for the total set of scores the correlational relationships between listening and the individual components of reading and language arts did not remain stable over a three month period of time.

The findings relevant to Research Question III as determined by the Paired-Differences t-Test were:

1. Consideration of the entire set of 102 scores indicated that change had occurred in favor of Form KS.

2. Inferential global comprehension remained in a static position.
3. The listening, grammar, spelling, and study skills *t*-values were negative illustrating a regressive tendency for these language arts components.
4. Usage and Punctuation showed change in favor of Form KS.
5. At the second grade level, the reading components with the exception of inferential global comprehension showed change which could be attributed to Form KS.
6. Among the second grade language arts components, grammar was static; listening and spelling tended to show a regressive tendency toward Form JS; and, punctuation, usage, and study skills showed change in favor of Form KS.
7. At the third grade level, the reading components tended to indicate that change had occurred in favor of Form KS.
8. At the third grade level, inferential global comprehension tended to regress toward Form JS.
9. Among the third grade language arts components, listening, usage, spelling, and study skills showed a regressive tendency toward Form JS; punctuation and grammar showed change in favor of Form KS.

10. At the fourth grade level, inferential global comprehension remained static.
11. At the fourth grade level, vocabulary, inferential specific comprehension, literal global comprehension, literal specific comprehension, and evaluative comprehension indicated that change had occurred favoring Form KS.
12. At the fourth grade level, grammar and spelling remained relatively static; listening, usage, and study skills showed a regressive tendency; and, punctuation demonstrated change in favor of Form KS.

The findings relative to Research Question III as determined through the Run's Test were:

1. Sixty-five percent of the Run's values could be attributed to a random element occurring in the scores for the Form JS and Form KS reading and language arts components.
2. Thirty-five percent of the Run's values for the Form JS and Form KS reading and language arts components could be attributed to the occurrence of elements within the scores such as a repeated score or scores falling above or below the median.

Conclusion

The following conclusions were reached after examination of the findings:

1. The use of listening comprehension as a single predictor of reading and language arts achievement may not be viable for classroom implementation.
2. Combination of listening comprehension and selected reading components such as inferential specific comprehension would appear to be useful predictors of language arts achievement.
3. Combination of listening comprehension and selected language arts components such as spelling and study skills may be plausible predictors of reading achievement.
4. The lack of stability in the correlation coefficients over a period of time may illustrate that correlation coefficients should not be viewed as absolutes.
5. Great differences in the students' linguistic competence, maturity level, physical development, general academic ability, and experiential background may occur within a grade level affecting the degree and magnitude of the relationship between listening comprehension and the individual reading and language arts components.

6. The lack of highly substantial correlations may be attributed to the overlapping characteristics of reading and language arts components.
7. Based on the findings concerning inferential specific comprehension, higher cognitive factors may be more relevant predictors of reading and language arts achievement.

Recommendations

Consideration of the findings and conclusions generated the following recommendations:

1. A plausible avenue of study rests with the construction of a listening test designed for the elementary, intermediate, and middle school learner based on levels of language competence, cognitive factors, and affective factors common to each age level.
2. Analysis of listening processes and behaviors within the context of metalinguistic awareness could lead to a greater understanding of how lower elementary grade students perceive, assimilate, adapt, and apply the semantic and syntactic constraints of language.
3. A long range progressive study of listening behavior patterns which emerge throughout the

development of cognitive, psychological, and maturational processes through early childhood to early adolescence would offer valuable insights into the acquisition of linguistic competence.

4. Further study concerning the nature of comprehension is needed to explore fully the commonalities of listening comprehension and reading comprehension.
5. The use of a test having more items per subtest would enhance the probability of producing a wider range of scores which should lead to a better understanding of reading and language arts development at the lower elementary levels.

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APPENDIX

Table A-1

The November 1982 Form JS MAT Raw Score Data for the Second, Third, and Fourth Grade Participants from the Johnson County School System, Mountain City, Tennessee

OBS	GRADE	STDNUM	LISTEN	PUNCT	USAGE	GRAM	SPELL	STDSKILL	VOCAB	LS	LG	IS	IG	E
1	2	1	6	6	3	6	9	4	1	20	4	9	3	2
2	2	2	7	4	2	4	4	3	1	7	0	2	2	0
3	2	3	8	4	3	4	3	3	0	12	1	1	1	1
4	2	4	8	3	3	5	7	1	0	17	4	6	3	0
5	2	5	8	3	2	4	9	2	1	17	2	9	3	2
6	2	6	6	2	2	4	6	2	1	9	3	5	2	1
7	2	7	6	6	3	5	9	2	0	17	2	7	3	0
8	2	8	5	2	1	5	9	3	0	3	3	3	1	0
9	2	9	5	5	2	7	4	2	0	12	1	4	2	1
10	2	10	7	5	3	7	5	2	0	18	3	7	0	1
11	2	11	6	6	2	6	9	2	1	24	4	10	4	2
12	2	12	7	5	2	6	4	2	0	13	2	6	1	2
13	2	13	6	3	4	5	4	1	1	12	2	2	1	1
14	2	14	8	4	3	4	4	1	1	17	2	9	3	2
15	2	15	7	3	4	7	8	1	0	14	3	7	1	0
16	2	16	7	6	4	7	9	3	1	23	4	10	3	2
17	2	17	6	±	3	5	4	1	1	5	1	4	2	0
18	2	18	8	4	5	6	7	2	0	16	3	7	1	1
19	2	19	8	4	0	4	2	1	1	12	3	5	2	0
20	2	20	6	2	3	6	5	2	0	10	3	3	1	0
21	2	21	8	2	2	5	7	3	0	11	1	6	2	1
22	2	22	7	5	5	6	4	1	1	8	4	5	1	0
23	2	23	5	6	2	5	8	3	0	18	1	9	4	1
24	2	24	7	2	4	5	6	1	1	12	4	10	2	2
25	2	25	8	3	2	3	3	2	0	10	1	3	2	2
26	2	26	7	6	2	6	8	3	0	16	2	7	2	1
27	2	27	7	3	2	4	9	2	0	17	3	7	2	1
28	2	28	8	3	2	4	3	2	1	7	2	4	3	2
29	2	29	5	4	2	6	8	3	0	21	4	6	3	2
30	2	30	6	5	3	7	5	1	0	7	3	3	1	0
31	1	31	7	3	4	6	7	2	0	15	4	7	2	1
32	2	32	9	7	3	7	0	3	1	19	3	8	2	1
33	2	33	8	4	4	7	8	3	0	21	7	9	3	1
34	3	34	5	8	5	7	7	5	2	19	2	5	3	1
35	3	35	7	10	4	8	10	7	1	34	5	6	5	1
36	3	36	5	6	8	7	12	4	1	27	4	4	6	1
37	3	37	5	5	5	7	5	4	1	21	3	4	2	0
38	3	38	3	5	5	8	4	3	0	7	3	1	4	0
39	3	39	4	8	4	7	8	6	1	20	3	5	4	1
40	3	40	4	10	7	6	7	7	1	28	5	6	6	0
41	3	41	3	7	7	8	12	3	1	30	4	5	2	1
42	3	42	4	13	8	9	13	7	2	35	5	6	5	1
43	3	43	3	9	6	7	10	7	1	24	4	4	5	0
44	3	44	4	5	4	6	7	4	1	26	3	2	2	0
45	3	45	5	7	5	8	13	7	2	34	4	6	6	1
46	3	46	4	8	0	6	4	4	1	19	2	1	2	0
47	3	47	3	7	6	7	5	2	1	11	1	3	1	0
48	3	48	4	10	6	9	12	6	2	29	4	6	6	1
49	3	49	3	9	7	7	12	6	0	16	4	2	1	0
50	3	50	3	10	7	8	11	4	1	22	3	5	4	1
51	3	51	5	9	6	7	11	7	2	28	4	5	4	1
52	3	52	5	9	5	9	12	6	1	32	5	6	4	1
53	3	53	4	8	7	7	5	7	1	13	1	0	1	1
54	3	54	4	12	4	8	7	6	1	23	3	4	1	0
55	3	55	4	8	6	9	11	7	1	20	3	1	2	1
56	3	56	4	7	4	7	9	5	1	28	3	4	3	1
57	3	57	3	2	5	5	7	3	1	21	2	6	3	1
58	3	58	3	5	1	7	7	6	1	7	0	2	1	1
59	3	59	3	9	3	4	4	3	0	19	1	0	2	0
60	3	60	5	8	5	9	12	6	2	34	4	6	5	1
61	3	61	4	11	5	9	11	7	1	30	4	6	5	1
62	3	62	2	2	2	5	7	3	1	9	1	2	1	0
63	3	63	2	5	5	6	11	3	0	22	3	1	3	0
64	3	64	5	8	4	6	10	7	0	26	3	4	3	0
65	3	65	2	8	3	7	6	6	1	24	4	0	3	0
66	3	66	5	13	7	8	12	7	0	32	5	5	4	1
67	4	67	5	5	4	4	4	2	0	7	2	3	1	0
68	4	68	5	16	8	8	12	5	4	29	9	5	7	3
69	4	69	5	9	6	5	8	4	3	19	9	4	3	1
70	4	70	5	5	3	3	8	2	0	10	7	2	1	1
71	4	71	5	14	6	7	10	5	4	29	10	5	6	3
72	4	72	5	12	7	2	8	4	2	25	8	4	6	3

Table A-1 (continued)

OBS	GRADE	STDNUM	LISTEN	PUNCT	USAGE	GRAM	SPELL	STDSKILL	VOCAB	LS	LG	IS	IG	E
73	4	73	4	5	6	2	6	4	2	24	9	5	5	2
74	4	74	3	11	8	1	9	5	2	23	9	5	4	2
75	4	75	5	13	7	3	12	0	0	0	0	0	0	0
76	4	76	4	11	6	2	7	4	5	23	7	2	2	2
77	4	77	5	7	4	0	6	3	2	11	5	1	2	2
78	4	78	4	13	5	2	12	4	1	17	5	1	3	2
79	4	79	9	16	8	5	12	6	5	29	10	5	6	3
80	4	80	4	9	3	4	3	3	1	11	3	2	3	0
81	4	81	5	0	7	3	6	5	2	8	7	4	0	1
82	4	82	5	6	8	2	12	5	0	0	0	0	0	0
83	4	83	4	4	1	1	5	4	2	7	6	3	2	1
84	4	84	5	16	5	5	10	3	2	23	10	2	5	3
85	4	85	3	13	5	1	9	3	3	24	9	5	5	3
86	4	86	4	11	6	2	7	4	3	23	7	4	4	2
87	4	87	5	5	6	2	9	4	2	16	7	1	1	2
88	4	88	5	14	3	6	7	4	3	24	9	4	7	2
89	4	89	5	13	5	5	8	2	1	25	8	2	3	1
90	4	90	3	11	8	3	11	4	3	25	9	4	6	3
91	4	91	5	11	6	2	7	3	1	19	8	2	2	2
92	4	92	3	6	3	3	3	1	3	5	2	2	2	0
93	4	93	5	11	5	4	10	4	2	22	8	3	1	1
94	4	94	4	8	5	1	6	3	0	5	2	1	1	0
95	4	95	5	8	6	3	11	4	1	15	7	1	1	2
96	4	96	4	10	6	5	6	4	3	18	8	2	1	2
97	4	97	4	9	4	4	5	4	3	14	3	2	1	2
98	4	98	4	7	4	4	6	0	1	8	4	1	1	0
99	4	99	5	7	5	5	7	1	2	15	7	2	0	1
100	4	100	5	8	4	4	8	4	2	15	3	1	0	1
101	4	101	5	13	6	6	9	3	5	24	9	4	6	3
102	4	102	4	15	6	6	10	4	3	25	9	3	5	3

Table A-2

The February 1983 Form KS MAT Raw Score Data for the Second, Third, and Fourth Grade Participants from the Johnson County School System, Mountain City, Tennessee

OBS	GRADE	STDNUM	LISTEN	PUNCT	USAGE	GRAM	SPELL	STDSKILL	VOCAB	LS	LG	IS	IG	E
1	2	1	5	5	6	5	6	7	2	29	5	5	3	1
2	2	2	5	6	1	6	2	4	1	11	3	1	0	1
3	2	3	5	4	1	1	3	1	0	10	1	2	1	0
4	2	4	5	4	7	5	5	1	0	19	3	2	3	1
5	2	5	5	10	4	6	3	5	1	8	2	3	1	1
6	2	6	5	7	5	6	4	2	1	7	1	3	0	1
7	2	7	4	12	6	8	6	5	2	27	5	5	1	1
8	2	8	4	7	3	3	9	2	1	9	0	1	1	1
9	2	9	3	4	2	7	7	3	1	18	2	3	1	1
10	2	10	2	8	5	7	5	5	0	24	2	4	1	0
11	2	11	4	6	8	8	6	7	2	29	4	6	3	1
12	2	12	5	6	2	5	4	4	1	13	1	2	3	0
13	2	13	5	5	4	2	2	0	2	8	0	1	0	1
14	2	14	5	4	3	7	6	0	2	13	2	4	1	1
15	2	15	4	8	7	8	6	3	1	26	5	6	1	1
16	2	16	3	11	8	8	12	7	2	30	5	7	2	1
17	2	17	1	4	3	3	5	0	0	8	0	2	0	0
18	2	18	5	6	6	7	4	1	0	6	0	3	0	0
19	2	19	3	2	3	3	2	2	0	7	1	4	3	0
20	2	20	4	3	2	3	3	3	0	11	0	3	1	1
21	2	21	5	5	6	8	3	3	0	18	3	2	1	0
22	2	22	4	8	4	7	5	0	1	10	3	1	1	0
23	2	23	4	7	8	6	3	7	1	23	3	5	2	1
24	2	24	5	8	3	6	6	5	2	22	2	3	1	1
25	2	25	3	5	6	1	0	2	0	12	0	1	1	0
26	2	26	4	9	7	8	6	4	1	22	3	7	2	1
27	2	27	5	8	4	6	8	5	2	21	2	3	3	1
28	2	28	5	6	5	6	5	1	0	14	3	2	0	1
29	2	29	4	7	4	6	7	3	2	23	4	5	1	1
30	2	30	4	6	7	4	1	1	1	8	2	2	0	1
31	2	31	4	6	5	7	9	3	2	24	5	5	3	1
32	2	32	4	5	6	9	10	3	1	27	4	6	0	1
33	2	33	5	8	7	5	8	7	2	25	6	7	1	1
34	3	34	4	12	4	3	8	3	4	28	3	9	3	1
35	3	35	5	13	4	4	9	4	3	27	6	9	3	1
36	3	36	3	12	5	5	11	3	3	30	5	9	4	1
37	3	37	5	4	4	4	4	2	0	15	1	6	3	1
38	3	38	3	6	5	2	4	1	2	9	1	3	2	0
39	3	39	3	12	5	1	8	4	2	21	4	6	3	0
40	3	40	2	13	5	3	4	3	3	24	2	6	2	1
41	3	41	3	8	6	3	5	3	3	23	2	6	3	0
42	3	42	4	15	8	7	11	6	5	31	6	9	4	1
43	3	43	5	14	6	5	4	5	2	19	2	5	2	0
44	3	44	5	11	5	4	3	2	3	19	2	6	1	0
45	3	45	4	10	9	7	5	3	3	29	5	9	4	1
46	3	46	4	8	1	3	8	3	1	7	3	2	1	0
47	3	47	3	9	2	4	1	3	0	9	1	1	2	1
48	3	48	4	11	4	2	9	4	3	26	3	5	3	0
49	3	49	4	15	7	3	7	3	4	23	5	7	2	0
50	3	50	5	11	6	6	9	4	4	14	1	4	2	0
51	3	51	4	10	5	3	9	5	5	25	6	8	4	0
52	3	52	4	10	4	4	10	4	3	28	4	8	3	0
53	3	53	5	10	3	1	4	2	1	5	0	5	3	1
54	3	54	4	12	5	4	7	2	1	19	1	4	1	0
55	3	55	4	12	5	3	8	3	1	20	4	7	2	1
56	3	56	4	14	4	4	4	2	3	19	1	6	1	0
57	3	57	2	7	3	2	4	1	3	16	3	4	2	1
58	3	58	3	7	1	2	4	0	2	12	3	6	2	0
59	3	59	3	8	2	5	4	4	0	7	4	3	1	0
60	3	60	5	11	6	5	9	3	3	28	5	7	4	0
61	3	61	4	14	8	3	8	5	6	26	4	8	1	0
62	3	62	2	7	2	2	1	1	1	5	2	2	0	0
63	3	63	5	10	3	2	6	3	0	15	4	3	1	0
64	3	64	2	8	4	5	8	5	4	28	3	8	3	1
65	3	65	1	10	4	3	6	3	4	17	4	3	2	1
66	3	66	5	14	7	7	12	3	6	29	5	8	4	1
67	4	67	3	12	2	1	8	2	3	13	2	1	2	0
68	4	68	5	17	7	7	12	6	5	30	6	9	4	2
69	4	69	5	11	7	2	10	3	2	23	4	5	2	1
70	4	70	4	8	3	2	8	0	1	16	4	2	1	0
71	4	71	5	14	8	6	10	5	6	28	7	9	4	1
72	4	72	4	15	8	2	10	3	4	29	6	8	4	1

Table A-2 (continued)

OBS	GRADE	STDNUM	LISTEN	PUNCT	USAGE	GRAM	SPELL	STDSKILL	VOCAB	LS	LG	IS	IG	E
73	4	73	2	10	5	5	7	5	2	30	5	8	3	1
74	4	74	3	15	6	2	9	2	3	27	2	6	4	1
75	4	75	4	17	9	9	11	6	6	29	6	9	2	2
76	4	76	5	13	4	4	9	5	2	25	2	8	3	1
77	4	77	3	9	3	3	6	1	1	14	1	3	1	1
78	4	78	2	12	6	3	10	4	3	20	1	6	2	0
79	4	79	4	19	7	7	12	6	5	30	6	9	4	2
80	4	80	3	11	2	1	3	1	2	16	1	3	2	1
81	4	81	5	11	2	2	6	2	2	18	4	3	1	0
82	4	82	5	10	8	4	10	3	2	20	4	4	3	1
83	4	83	4	7	4	2	4	0	2	9	4	0	1	1
84	4	84	4	15	7	3	8	4	4	29	3	6	3	0
85	4	85	4	11	7	8	11	5	5	28	3	9	3	1
86	4	86	5	15	6	7	10	6	6	24	5	7	3	0
87	4	87	4	9	4	2	10	3	1	12	2	5	1	0
88	4	88	4	11	8	3	6	4	4	28	5	7	4	2
89	4	89	4	12	7	4	8	3	4	19	4	6	2	0
90	4	90	4	17	6	7	9	4	6	20	1	6	4	1
91	4	91	3	15	7	4	7	4	1	24	5	4	1	0
92	4	92	4	15	2	4	9	1	1	11	3	2	2	0
93	4	93	2	15	5	3	9	2	2	16	5	3	0	0
94	4	94	4	9	6	6	6	4	1	13	2	2	3	1
95	4	95	4	12	4	4	11	2	2	6	1	4	0	0
96	4	96	3	13	4	4	7	1	1	9	1	3	3	1
97	4	97	3	5	2	2	5	3	1	±±	2	4	2	1
98	4	98	2	9	4	3	6	2	0	8	1	2	2	0
99	4	99	5	13	3	4	7	0	2	15	4	2	1	1
100	4	100	3	17	6	7	9	4	6	19	0	6	4	1
101	4	101	5	15	6	5	9	4	4	32	5	9	4	2
102	4	102	3	15	7	6	10	5	4	48	6	8	3	0

VITA

Frances Sharon Curd was born in Mountain City, Tennessee, on October 22, 1946. She is the daughter of Lorraine Gentry Curd and the late Robert L. Curd. Ms. Curd received a B.A. degree in English from King College, Bristol, Tennessee in 1970. She received a M.A. degree in Elementary Education from Appalachian State University in Boone, North Carolina, in 1980. Doctoral studies for the Ed.D. degree were completed in August 1983 at The University of Tennessee, Knoxville.

Ms. Curd's initial teaching experience began in the Wilkes County Junior High School in Washington, Georgia. Additional teaching experience involved art, English, and Gifted and Talented Education. For the past seven years, she has taught combinations of grades three, four, five, and six in Johnson County School System.

Ms. Curd holds active membership in Phi Delta Kappa, Pi Lambda Theta, The National Council of Teachers of English, The International Reading Association, TEA, and NEA. Ms. Curd is also a member of the First Christian Church and the Order of the Eastern Star, Maple Chapter, No. 79 of Mountain City, Tennessee.