Central Washington University

ScholarWorks@CWU

All Master's Theses Master's Theses

1965

A Study of Teaching Procedures Used in Developing Critical Listening Skills in the Fourth Grade at Selah, Washington

Beryl Boggan Carlson Central Washington University

Follow this and additional works at: https://digitalcommons.cwu.edu/etd

Part of the Curriculum and Instruction Commons, Educational Methods Commons, and the Elementary Education and Teaching Commons

Recommended Citation

Carlson, Beryl Boggan, "A Study of Teaching Procedures Used in Developing Critical Listening Skills in the Fourth Grade at Selah, Washington" (1965). *All Master's Theses.* 447. https://digitalcommons.cwu.edu/etd/447

This Thesis is brought to you for free and open access by the Master's Theses at ScholarWorks@CWU. It has been accepted for inclusion in All Master's Theses by an authorized administrator of ScholarWorks@CWU. For more information, please contact scholarworks@cwu.edu.

A STUDY OF TEACHING PROCEDURES USED IN DEVELOPING CRITICAL LISTENING SKILLS IN THE FOURTH GRADE AT SELAH, WASHINGTON

A Thesis

Presented to

the Graduate Faculty

Central Washington State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Education

by

Beryl Boggan Carlson

July 1965

LD 5771.3 Cスろろろs

131088

John E. Davis, COMMITTEE CHAIRMAN

Roy R. Wilson, Jr.

John A. Schwenker

ACKNOWLEDGEMENTS

The writer wishes to express sincere appreciation to Dr. John Davis for the understanding, guidance, and valuable suggestions offered throughout the writing of this manuscript and to the other two members of the committee, Mr. Jack Schwenker and Mr. Roy Wilson. Valuable assistance was also given by Mr. Ted Hendrickson, Principal, and the co-operating teachers at Sunset School in Selah, Washington.

TABLE OF CONTENTS

CHAPT	ER P	AGE
ı.	THE PROBLEM AND DEFINITIONS OF TERMS USED	1
	The Problem	1
	Statement of the problem	1
	Importance of the study	2
	Definition of Terms Used	2
	Direct training	2
	Critical listening	2
	Organization of the Remainder of the Thesis	2
	Limitations of the Study	3
II.	REVIEW OF THE LITERATURE	4
	Literature on Needs for New Concepts	5
	Literature Used as Guides for New Concepts	9
	Summary	13
III.	GROUPS STUDIED AND MATERIALS USED	16
	Groups Studied	16
	Materials Used	16
IV.	TECHNIQUE AND RESULTS OF THE STUDY	18
	Technique	18
	Results	23
	Summary	26
v.	SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	28
	Summary	28
	Conclusions	30

CHA PTE R																															PAGE	į
	Re	co	mi	ıer	nda	ıti	Lor	ıs	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	30	
BIBLIOG	RAF	HY	?	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	32	
A PP END I	X																														34	

LIST OF TABLES

TABLE		PAGE
I.	Comparison of Mean Scores on STEP Listening Tests:	
	Experimental Group and Control Group A	23
II.	Comparison of Mean Scores on STEP Listening Tests:	
	Experimental Group and Control Group B	24
III.	Comparison of Mean Scores on STEP Listening Tests:	
	Experimental Group and Control Group C	24
IV.	Comparison of Mean Scores on STEP Listening Tests:	
	Experimental Group and Control Group D	25
V.	Comparison of Mean Scores on STEP Listening Tests:	
	Matched Pairs From Experimental Group and Control Groups .	26

CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Oral communication has been refined to the point that there is almost world-wide sharing of events as they take place on our earth or in outer space. Technological developments that have increased oral communication such as the telephone, radio, television, tape recorder, sound film, phonograph, and loud speaker have made our age the age of listening, for without listening there is no aural-oral communication.

This calls for new emphasis upon the oral language program if the intellectual, social, emotional and personal needs of the boys and girls are to be met. Since listening and speaking skills can be taught at any level, a developmental program suited to the needs of the children in the classroom may be presented in connection with activities already found there. Good listening results from thorough understanding of speech, response, and recognition of that response.

I. THE PROBLEM

Statement of the problem. The central problem of this study was the development of a tentative general theory about the significance of critical listening instruction as an effective experience when incorporated into the language arts program. The logical solution of this problem was considered to be the first step in an attempt to develop a coherent philosophy of critical listening which identified the meaning, and value in the basic human experience of understanding, interpreting,

applying and evaluating oral communication. The hypothesis offered was that instruction in critical listening at the fourth grade level would be significant in developing more effective listeners as opposed to incidental instruction provided by the regular language arts program.

Importance of the study. In the intermediate grades many children are unable to discriminate well among the sounds of our language, thereby finding phonetic analysis a difficult work-attack skill. Others cannot or do not follow directions without numerous repetitions and are unable to use and retain information they do receive. Assuming that listening was essential to good study habits and improved methods of learning, the writer attempted to correlate critical listening instruction with the language arts program in an effort to prove that more effective listeners could be developed at the fourth grade level.

II. DEFINITIONS OF TERMS USED

<u>Direct training</u>. This term was used to explain the systematic and developmental approach to the teaching of critical listening.

<u>Critical listening.</u> Throughout the study, "critical listening" was used to imply understanding, interpreting, applying and evaluating.

III. ORGANIZATION OF THE REMAINDER OF THE THESIS

This study was organized into five major divisions. The present chapter identified and stated the problem. Chapter II contained the literature written by authorities concerning the general procedures used in teaching listening skills with specific case studies used to cite the

effectiveness of critical listening skills. Chapter III was a report of a study in listening conducted in the fourth grade at Selah, Washington, during the 1964-65 school year by the writer. Comparison was made of an experimental group that had received critical listening training, and four control groups that had followed the regular language arts program. The specific technique used and the results obtained were reported in the fourth section. The fifth and final major division contained a summary with conclusions and recommendations suggested by the study.

III. LIMITATIONS OF THE STUDY

This study was limited to a comparison of one experimental group of twenty children with four control groups of twenty children each, selected from the fourth grade of the public elementary school at Selah, Washington, during the 1964-65 school year.

Many variables which were not controlled could have influenced the ratings of the groups when they were compared with each other. Such unmeasurable factors as home background, personal experience, over-all health and emotional stability of the groups could have affected the outcome. In the school rooms, the room conditions, the quality of teaching, listening readiness and established listening habits could have had some bearing upon the test ratings.

Increased natural ability during the experimental period of the subjects, as well as increased familiarity with the tests, could have been reflected in the ultimate results.

CHAPTER II

REVIEW OF THE LITERATURE

"To hear an oriole sing May be a common thing -Or only a divine.

It is not of the bird Who sings the same, unheard, As unto crowd -

The fashion of the ear Attireth that it hear In dun, or fair -

So whether it be rune Or whether it be none Is of within.

The "Tune is in the tree -"
The skeptic - showeth me "No sir! In thee!"
Emily Dickinson

Whether to the poet, "The fashion of the ear attireth that it hear In dun or fair", or to Dr. Lundsteen: "Critical listening is the process of examining spoken materials in light of related, objective evidence, comparing the ideas with some standard or consensus, and then concluding or acting upon the judgment made", listening was a highly conscious, judging process. It involved not only a questioning attitude and analysis but also judgment (14:745).

Because most children hear normally and listen much of the time, it has been assumed that they listen proficiently, but listening is an active, understanding process, while hearing is more or less passive.

As listening habits are usually established in early childhood, first

lessons should begin while the child is very young, to be followed in pre-school years with experience in family listening situations. A child's entire life is influenced by his ability to listen effectively, and this skill may be one of the most valuable tools he can use in his efforts to bring understanding and peace to the world (5:268-270). With oral communication through mass media often intent upon changing the listener's thinking and behavior, "it is extremely urgent that listening should be accompanied with the same discriminating, penetrating, critical reactions as those employed while reading (24:18).

I. LITERATURE ON NEEDS FOR NEW CONCEPTS

Concern with listening has been growing since 1926 when Dr. Paul Rankin established that 70 per cent of the average adult's working day was spent in some form of communication, with 42.1 per cent of that time in the act of listening (20:629). Investigations in the elementary classroom by Wilt in 1949 showed that two and one half hours daily, or 57.5 per cent of the time was spent in listening (30:626). Although little research in the area of listening was done before 1950, since that time at least one hundred doctoral dissertations and over one hundred twenty master's theses have been written on studies related to the component skills of listening, listening instruction, and listening in relation to other factors (8:1). In 1955 Caffrey found little relationship between chronological age and listening ability, but that correlations between reading and listening comprehension were understandably high, from .60 to .82 (11:310). In 1964 a study by Lundsteen showed

that "the content, the concepts, the processes, and the abilities in critical listening, are amenable to empirical analysis and can be improved by practice" (14:748).

In reviewing research done in the past decade, Keller concluded that while substantial progress in testing and teaching methodology had been made, there was need for attention to thought processes that took place during listening. Toussaint (1960) suggested further investigation into the administration of listening tests by mechanical means, aural approach to teaching a number of subjects and the reasons for contradictory findings of existing research. Early (1960) paid particular attention to the growing interest in the teaching of listening, and to some of the research being done with one and two channel listening, the effects of noise, and the nature of individual differences (7:145-151).

Iver Moe's study in 1957 found that a first grader's auditory comprehension was more efficient in predicting early reading achievement than several common readiness or intelligence tests. The relationship of auditory comprehension to intelligence was quite high and probably reflected the intellectual stimulation and the level of oral communication in the home. A measure of auditory comprehension made a particular demand upon the intellectual processes of memory, cognition and reasoning, as well as the verbal factor of intelligence. Skill in auditory comprehension probably more faithfully indicated the language and intellectual factors in the child's background that influenced readiness and early reading success (25:7). However, this study by Moe failed to find listening performance a significant predictive measure of later achievement (7:145-151).

In the field of listening tests, Brown's study with college students resulted in the first published test of listening comprehension with national norms for grades 11-14 (2:623-636). In 1960 Lewis constructed listening ability tests for intermediate grades (13:455-459). Tests for use below grade eleven were first published by Educational Test Service (1956-57). In their review of the latter in 1959, Lorge, Lundquist, and Johnson, criticized the size of the sample used to establish norms, and questioned validity. Lauderville (1958) devised a listening test for use in the reading readiness stage with results that correlated significantly with reading achievement a year later. West (1958) developed an instrument to measure critical or evaluative aspects of listening in which testees were asked to identify the theme, action suggested, ideas offered, and supporting material in given presentations. Although only a beginning, it was a valuable step toward the evaluation of this crucial aspect of good listening (7:145-151).

A recent study found that first grade children had an average listening vocabulary of 23,700 words with a range from 6000 to 48,000. Pupils continued to show improvement in listening until about the end of the sixth grade, after which time as they achieved a fair degree of proficiency in reading they ceased to improve in listening (13:455-459). While current investigations support the assumption that listening abilities can be improved with instruction (4:147-151), other studies show that the average person will retain only 50 per cent of what he hears, no matter how hard he concentrates, and that two months later he can be expected to recall only half of that amount (27:4). In one experiment

in which selections were read to fourth grade children and comprehension checks followed, only 21 per cent to 33 per cent of the content was retained (27:4).

While much research study was concerned with the importance and methods of teaching listening, Nichols and Cashman (1960) stressed the importance of teacher attitudes and examples:

Efforts by teachers and pupils to take advantage of the "approval factor" in listening should yield substantial results. Two goals in particular are: elimination of the fear of listening to difficult material, and achievement of greater economy in learning.

Since adult listening habits are products of our experiences as young people, we recognize need to increase instructional units in school programs. By indicating approval of listening through our comments and observable habits, we improve the learning process (17:268-271).

In the past ten years adequate space has been given to the area of listening in curriculum booklets, in methods books, in pupils' text-books, and in articles for professional journals. Too often the stress is on listening for content, when the important part of the listening and reading process is not the recorder type of reception. The real emphasis should be on evaluation or critical listening and reading which requires the efficient use of an alert human mind (8:2). An example of this type of research was "Teaching and Testing Critical Listening in the Fifth and Sixth Grades" completed in 1963 by Lundsteen, who reported these implications:

It is time to begin a more scientific, systematic, developmental approach to the teaching of critical listening.

Long range planning is needed, spiraling through the elementary school with varied teaching strategies and devices.

Conclusion: If this is a generation confounded by the problems of "when to listen, what to listen to, and how to listen" - what exactly can we as language teachers do? . . . a re-thinking of the English curriculum offers us a summons, a challenge, and an opportunity to give children critical listening power (14:748).

II. LITERATURE USED AS GUIDES FOR NEW CONCEPTS

Textbook writers on listening agree on five things: most of us are poor listeners; with training we could improve our performance; schools definitely should provide such training; to operate at a high level we must learn to be dynamic, responsive, constructive, and courteous; the acquirement of these attributes will be richly rewarded (16:292).

Specific suggestions on how to acquire these generalizations are less helpful. As growth in capacity to listen is just as important to a child's future success and welfare as the other language arts, planned experiences designed to promote growth in this skill should be provided for respective stages of listening development. These stages have been outlined by Strickland:

- 1. Little conscious listening except as the child is directly and personally concerned with what is being presented.
- 2. Easily distracted by people and things in the environment.
- 3. Half listening while holding fast to own ideas and waiting to insert them at the first opportunity.
- 4. Listening passively with apparent absorption but little or no reaction.
- 5. Listening, forming associations, and responding with items from own experience rather than reacting to what is presented.
- 6. Listening and expressing some reaction through questions and comments.
- 7. Listening with evidence of genuine mental and emotional participation.
- 8. Listening with real meeting of minds. (24:57)

Russell and Russell (1959) performed a most useful task in gathering together and publishing in a handbook, various techniques

for teaching listening skills in the elementary school, classifying them by grade level. In the introduction, Wilson Mizner was quoted as saying, "A good listener is not only popular everywhere, but after a while he knows something." This manual was concerned with Mizner's "popularity," in the sense of worth-while group skills, and with his "knowing something"-with learning through listening. Within it were arranged the one hundred-ninety activities, into interests and needs of the typical pupil at the given grade level: subsections dealing with topics as words, analytical listening, and critical and creative listening; and listening with some specific purpose in mind (21:1).

Since listening was an assimilative communication skill it included the understanding and interpreting of symbols and required the development of certain skills and attitudes. Burns suggestions for teaching listening in the elementary schools included these:

Listening skills are important in learning to read, for direct association of sound, meaning, and word form must be established from the start. The ability to identify sounds heard at the beginning, middle or end of a word and to discriminate among sounds is the function of success in analyzing words phonetically. From the standpoint of interpreting what is read, skillful listening is indispensable. Pupils from beginning levels may be helped to realize that reading materials are "printed talk". Differences in reading and listening, though both are receptive skills, are that the listener is at the mercy of the speaker's rate, organization and delivery, making listening a personal experience between the producer and consumer of language" (3:11-14).

Pratt pointed out that emphasis on listening skills could be instrumental in raising the general level of listening ability, provided emphasis was placed on all skills associated with the process. Specifically, word perception, comprehending ideas, and using ideas to build understandings, were necessary for more effective learning (19:320).

With all research of the past thirty years showing that children spend more time listening than in any other language arts activity, recent publications revealed that findings from research were incorporated into teaching. Realizing that teaching listening was an art, teachers worked with Dr. Blake to devise this "Code for Teachers of Listening" which was published by Dr. Howard Blake, Associate Professor of Education at Temple University, in 1962.

- 1. Be a good listener myself.
- Use a classroom voice and facial expression that promote accurate listening.
- Initiate activities with interest levels of my class in mind.
- 4. Get everyone's attention before speaking.
- 5. Teach children that directions, instructions, and other types of information-giving, is only stated once.
- 6. Encourage children to listen to each other's contributions.
- 7. Ask many questions that require more than yes or no.
- 8. Take time to listen to pupils before school, after school, and during the school day.
- 9. Teach listening all day in connection with all subjects.
- 10. Create an emotional and physical climate conducive to good listening.
- 11. Establish with the children the purpose for which they should listen to each activity.
- 12. Be well prepared every day for the materials to be taught or activities to be directed.
- 13. Vary classroom program to provide variety of listening experiences.
- 14. Teach children the importance of being a good listener.
- 15. Realize that children as a rule spend more time listening than in any other communication skill.
- 16. Be aware of seating arrangement in each listening activity.
- 17. Help children set up standards for effective listening.
- 18. Teach children to develop appreciation and awareness of sounds.
- 19. Build a program in which listening skills are consistently taught and practiced.

Introduce unknown words through context, noting details, following directions, finding main and subordinate ideas, detecting clues to show speaker's trend of thought, point of view, inferences.

20. Teach desirable listening habits: self-discipline, mental curiosity, critical analysis, truth, logic sequence;

listening for different purposes, appreciative, analytical, informative, recreational, responsive, marginal; courtesy to the speaker; non-emotionalism; note taking; using the differential between thought speed and speaking speed (1:48-49).

These same objectives were used as the basis for 12 telecasts by Dr. Adah Miner in "Learning to Listen" (15:1-35). Her series was planned "to help children realize the importance of listening, recognize the purposes of listening, and learn some of the basic listening skills."

Some general understandings that should be part of the teacher's knowledge are based upon research in listening skills.

- Hearing and listening are not synonymous. Hearing is a physical act. Children may be aware of sound but may not be listening. When meaning is attached to the sound and that meaning is interpreted, the child is listening.
- 2. There are various kinds of listening. Three large general divisions are:
 - a. Accurate listening of the informational type;
 - b. Critical listening through which the listener weighs, selects, reacts, agrees, or disagrees;
 - c. Appreciative listening which includes experiences in listening to music, poetry, or stories.
- 3. Listening and speaking form the cycle of communication.
- 4. Rules should be followed for teaching listening similar to those previously listed. (10:1-2)

Practical suggestions for teaching listening were:

- a. Keeping a listening log
- b. Group discussion of listening surveys
- c. Listening posts of recordings, tapes, radio and television, with definite purposes in mind
- d. Games for listening
- e. Recordings for listening and speaking
- f. Direct teaching of speech sounds
- g. Group activity: an activity for speech practice
- h. Oral reading to teach careful listening of the informative type; to provide a rich background of folklore, the classics, and poetry; to entertain and give pleasure; to hear and appreciate the beauty of the English language; and to increase the listening vocabulary. (10:2-6)

In addition to those suggestions offered by other authors, Taylor concludes his pamphlet with this thought:

What is needed is a systematic listening program that will develop a flexible listener, one who is both effective and efficient in a wide range of listening situations. He is effective because he has at his command the insight and the specific skills with which to approach each listening situation. He is efficient because he possesses the auditory sensitivity and the functional facility that permit him to carry out listening tasks with a minimum expenditure of time and energy. (27:30)

III. SUMMARY

Interest in listening developed as a part of the communication movement in the 1940's in colleges and universities. With investigations being made by many educators into the various aspects of the need for critical listening, the importance of learning how to listen became apparent to elementary teachers. In the development of the listening skill the infant used his most highly developed organs, his ears, to attach meaning to the many sounds in his environment. As he learned to communicate, it was through his interaction with this environment that he acquired his listening and speaking vocabulary. Too often good listening habits were not established in early childhood when parents should have taught them in connection with courtesy habits, including the responsibility of "hearing the speaker out." Although children had formed certain attitudes toward listening before they went to school, the teacher helped to develop greater flexibility in this skill by placing a premium upon listening carefully and attentively.

Since the child's entire life was to be influenced by his ability to listen, he needed to learn the various kinds of listening that he

would use to broaden his knowledge, help him to enjoy music, stories, and drama, discriminate in his choice of entertainment, and listen critically that he might function intelligently as a citizen. Foundations for these important responsibilities were to be laid in the home and developed in the school.

"You must learn to listen before you can listen to learn," was as applicable to teachers as to children. Often the teacher needed to correct her courtesy habits in listening to the children, and to indicate by her comments and observable actions, her approval of good listening. As they experienced success in oral communication pupils developed an art of living, which was an objective of all teachers.

Research in the teaching of listening tended to support the theory that through the use of structural aids and key ideas, the teacher would be able to guide listening for specific purposes if the listener also assumed his share of the responsibility. While educators were aware of the inter-relationship of listening ability and speech, reading, and other communication skills, further research was needed to plan an integrated curriculum in the grades where these skills were introduced.

It would appear to be advisable for teachers to try to identify their pupils' respective stages of development in listening and provide planned experiences to bring about growth in that skill. Ability to listen and evaluate the speaker's words so that the response was a result of personal judgment, careful weighing of facts, and clear-cut reasoning was considered a goal for direct training of critical listening skills in the elementary school.

The literature treating certain vital aspects of listening skills in relation to learning, was reviewed in this chapter. The latter part of the chapter was concerned with the characteristics of a good critical listening program.

CHAPTER III

GROUPS STUDIED AND MATERIALS USED

I. GROUPS STUDIED

For the purpose of investigating the significance of critical listening instruction as an effective experience when incorporated into the regular language arts program, one hundred pupils from the five fourth grade rooms in the Sunset Elementary School at Selah, Washington, were selected. The experimental group included 13 boys and 7 girls from one room; the control groups were composed of twenty pupils from each of the other rooms, a total of 37 boys and 43 girls.

Each group of twenty pupils from the five rooms, both experimental and control groups, had a mean score of 78 per cent on the SRA Listening Comprehension Tests, and a mean grade equivalent of 4.69 on the Iowa Basic Skills Test composite.

The chronological ages of all groups varied from nine years, eight months to eleven years, one month; a range of one year, five months. The median chronological age was ten years, three months.

Intelligence quotients ranged from 75 to 134 in the control groups, 80 to 119 in the experimental group, with a median of 104 in both groups.

II. MATERIALS USED

The Iowa Basic Skills Tests were given in December of the 1964-65 school year as one means of measuring a child's scholastic ability in the fourth grade at Selah, Washington, as compared to the national average.

These composite scores were used as one basis for selecting group members for the investigation.

"Listening Skill Builders" from the <u>SRA Reading Laboratories</u> were used as the other measurement of ability to determine the equivalent groups from the five fourth grade rooms.

To improve critical listening in the experimental room, the teacher used New Practice Readers Book C 1962, by Webster Publishing Company; material from the <u>Listen and Read</u> program published by the Educational Development Laboratories; and teacher made tapes for listening as suggested by <u>Listening Aids</u> by Russell and Russell, and "Learning to Listen" by Dr. Adah Miner.

To build listening readiness and maintain interest, art and written work based upon Dr. Miner's good listening formula, "A L TM Q=GL" (Attention, Listen, Tell Myself, Question equal Good Listening), and SRA's "TQLR" (Tune-in, Question, Listen, Review), were displayed.

The final test for listening was the Sequential Tests of Educational Progress, 4B, published by the Educational Testing Service.

The t-Test of Significance developed by R. A. Fisher was used in analysis of the descriptive data, because the t-Test can be used with any sample size, and should be thought of as the general technique for testing the significance of differences between means either independent or correlated (27:321).

CHAPTER IV

TECHNIQUE AND RESULT OF THE STUDY

I. TECHNIQUE

For purposes of this study, the school year 1964-65 was divided into two parts. Part One, consisting of the first semester, was the period in which all fourth grade rooms participated in the "Learning to Listen" television program, the regular language arts curriculum studies, and the SRA Reading Laboratory. In December the Iowa Basic Skills Tests were administered to all fourth grades.

In Part Two, the second semester, beginning January 25, 1965, the SRA Listening Skills Tests were given to all fourth grade pupils. Two tests each day on alternate days completed the ten comprehension tests the first week in February. At that time the writer corrected all of the SRA Listening Tests, recording the scores for each child.

In determining the experimental group and the control groups, scores of 941 to 946 out of a possible 1200 for each 20 pupils selected from each of the five rooms, was used as a scale, averaging 78 per cent. This sample was also based upon room groups whose combined scores were rated as 4.69 grade equivalent on the Iowa Basic Skills Test. All five groups were as nearly equal in ability as could be predicted from the combined test scores.

The experimental group received direct training in critical listening designed to increase the ability to listen with understanding, interpretation, application and evaluation of oral communication. These

special classes were conducted for two twenty-minute periods, three times weekly over a six week period. The control group received no direct training in listening skills during this period.

The tester chose the <u>New Practice Readers Book C</u> by Stone to build readiness in critical listening for the experimental group because the content was interesting to fourth grade level, the vocabulary was appropriate to all pupils, and the reader was composed of short stories with tests to improve specific skills which could be read by the tester for pupils' immediate answers and correction. Specific skills tested were consistent with those tested on accepted reading achievement tests:

- 1. Finding specific answers.
- 2. Implied details.
- 3. Meaning of the whole.
- 4. Recognition of the correctness, falseness, or pertinence of a statement in relation to the selection.
- 5. Awareness of the falseness of a statement in relation to the selection.
- 6. Recognition of the meanings of words in context (26:1-4).

For the first two weeks duplicated copies of the tests were made for each child to follow silently as the tester read them orally so that the pupils would understand the procedure in writing answers. The next two weeks the pupils listened to the story, then wrote answers to the comprehension tests read by the tester. Each child kept a record of his score after the papers had been exchanged and corrected. Discussion of the questions followed each session.

During this time TQLR (Tune-in, Question, Listen and Review), and ALTMQ=GL (Attention, Listen, Tell Myself, Question, equal Good Listening), were used as topics for oral and written English activities, and for art posters on the bulletin board to stimulate interest in listening.

Tapes prepared by the tester based on activities suggested in

Listening Aids by Russell and Russell were used during the fifth week.

Discussion of activities and attitudes preceded each lesson.

ACTIVITY ATTITUDE

- 1. Words Pronunciation
 Articulation
- (a) Pronouncing words correctly (aid to spelling)
 - (b) Pronouncing words clearly (aid to audience).

- Understanding
 - (a) Main idea
 - (b) Two or three supporting ideas
 - (c) Sequence of ideas
 - (d) Purpose of speaker
 - (e) Two sides of a question
 - (f) Instructions
 - (g) Next steps or events

- 2. (a) Listening takes concentration
 - (b) A good listener helps the speaker
 - (c) Have a purpose for listening
 - (d) Connect what is heard and what is already known
 - (e) Try to find out what this means to do next

- 3. Appreciation
 - (a) Story
 - (b) Poem
 - (c) Music

- 3. (a) Relaxation
 - (b) Encourage related ideas
 - (c) List other related stories, poems, or pieces of music (21:62).

Stories were taped from the Controlled Reader's Teacher's Manual with comprehension tests. Poems were chosen by the pupils from their Houghton Mifflin English for Meaning. Music appreciation was encouraged by the music teacher in her class.

For the last week's direct training in critical listening, two sessions made use of tapes suitable for lower intermediate pupils from the <u>Listen and Read</u> program published by Educational Developmental Laboratories.

In preparation for these tapes "Ten Bad Listening Habits" were discussed:

- 1. Hop-skip-and-jump listening
- 2. "I get-the-facts" listening
- 3. Emotional deaf spots
- 4. Supersensitive listening
- 5. Avoiding difficult explanations
- 6. Dismissing a subject as uninteresting
- 7. Pretending attention
- 8. Criticizing a speaker's diction and appearance
- 9. Yielding to distractions
- 10. Paper and pencil listening

The pupils were also familiarized with "Basic in Critical Listening" as suggested by Sam Duker (6:170-174)

Be aware of the most commonly used propaganda devices such as "band wagon" effect, "everybody is doing it"; the name dropping effect "Mickey Mantle eat's it. Why don't you?"; the "glittering generality" effect (associating a completely unrelated idea with patriotism or motherhood; the "name calling" effect (that's a Communist idea); the "card stacking" effect, and others. Critical listening can only take place when the listener is aware of some of the simplest elements of logic-fallacious syllogisms must be instantly spotted.

The final lesson was the taping of each pupil of his original composition on 'Why I Am Proud to be an American." These tapes were then played back to the class for listening appreciation.

Through this six-week period of direct training in critical listening, the tester attempted to follow the "Goals for Listening" suggested by Maurice Lewis (13:455-459).

A. A Good Listeners Behavior

- 1. He is aware of the importance of listening in the learning process
- 2. He understands the roles of the speaker and the listener in the communication process
- 3. He listens through to the end of a discourse before he attempts to draw conclusions
- 4. He can follow directions orally

- 5. He adjusts his listening to the purpose at hand
- 6. He enjoys listening
- He is a critical listener -- discriminates between fact and fiction.

B. Principles of Learning

- Children learn what they practice. Unless positive steps are taken to teach listening, learning may be negative.
- 2. Children need to understand what it is they are trying to learn.
- Children need to become aware of their ability to listen.
- Children need opportunities to discover that they can improve their listening ability.
- 5. Oral language should be taught so that it fosters good listening.
- 6. Oral language is taught with emphasis upon communication.
- Children have opportunities to listen to difficult material read to them by the teacher.
- 8. Individual differences in listening should be recognized.

Final testing of all groups was completed the second week in April, 1965. The STEP Listening Tests, Form B, were read by each home room teacher to the pupils in her class with all pupils filling in the answer sheets. Two sessions of 45 minutes each, on alternate mornings, were required for the teacher to read the script and answers to be checked by the pupils. All test papers were scored and results compiled as directed in the test manual by the tester. The STEP Listening Test description included these purposes:

Measures ability through listening to passages read by the teacher, to comprehend main ideas and remember significant details, and to evaluate and apply the material presented. Materials include directions and simple explanation, exposition, narration, argument and persuasion, and aesthetic material, both poetry and prose (23:1-3).

In this experiment, a sampling was taken of the five fourth grade rooms where measurements were made of the listening ability possessed by the subjects being studied.

II. RESULTS

From the results of the scores made on the STEP Listening Tests tables were constructed in a manner to indicate the mean scores and the t scores of the experimental group and individual control groups.

Table I illustrated the relative gain in listening comprehension as measured by STEP Listening Tests, between the experimental group that had received direct training in critical listening skills, and one control group, Group A, that had carried on the regular language arts class. Both groups had been matched in listening ability and Iowa Basic Skills composite abilities at the beginning of the study.

TABLE I

COMPARISON OF MEAN SCORES ON STEP LISTENING TESTS:

EXPERIMENTAL GROUP AND CONTROL GROUP A

		Obtained		Obtained	Required	
Group	N	Mean	S.D.	t	t	
Experimental	20	66.10	2 51	2 22	2 02*	
Control	20	60.25	2,51	2.33	2.03*	

It may be seen in Table I that the mean of the experimental group excelled the mean of the control group. The obtained \underline{t} of 2.33 when compared with the required \underline{t} of 2.03 was found to be .30 statistically higher than the score necessary to show significance at the .05 "level of confidence".

Comparison of mean scores on the STEP Listening Tests for the experimental group and control group B was shown in Table II.

TABLE II

COMPARISON OF MEAN SCORES ON STEP LISTENING TESTS:

EXPERIMENTAL GROUP AND CONTROL GROUP B

Group	N	Obtained Mean	S.D.	Obtained t	Required t
Experimental	20	66.10	2 20	3.59	2.03*
Control	20	57.85	2.30	3.39	2.03^
*Significant	at the .	05 level of co	onfidence.		

It may be seen in Table II that the mean of the experimental group excelled the mean of the control group. The obtained \underline{t} of 3.59 when compared with the required \underline{t} of 2.03 was 1.56 higher than the required \underline{t} of 2.03 to be statistically significant.

The mean scores on the STEP Listening Tests for the experimental group and control group C are compared in Table III.

TABLE III

COMPARISON OF MEAN SCORES ON STEP LISTENING TESTS:

EXPERIMENTAL GROUP AND CONTROL GROUP C

Group	N	Obtained M ean	S.D.	Obtained t	Required t
Experimental	20	66.10	2.46	2.76	2.03*
Control	20	59.30	2.40	2.70	2.03^
*Significant	at the	.05 level of co	nfidence.		

In Table III it may be seen that the mean of the experimental group excelled the mean of the control group. The obtained \underline{t} of 2.76 when compared with the required \underline{t} of 2.03 showed .73 more than was required to be statistically significant.

Indicated in Table IV is the comparison of mean scores of the experimental group and control group D ratings on the STEP Listening Tests.

TABLE IV

COMPARISON OF MEAN SCORES ON STEP LISTENING TESTS:

EXPERIMENTAL GROUP AND CONTROL GROUP D

Group	N	Obtained Mean	S.D.	Obtained t	Required t	
Experimental	20	66.10	3.01			
Control	20	59.15		2.31	2.03*	
*Significan						

It may be seen in Table IV that the mean of the experimental group excelled the mean of the control group. The obtained \underline{t} of 2.76 when compared with the required \underline{t} of 2.03 was found to be .73 higher than was necessary to show significance at the .05 level of confidence.

Comparison of mean on the STEP Listening Tests for matched pairs from the experimental group and the combined control groups is indicated in Table V, located on page 26.

In Table V it may be seen that the mean of the experimental group excelled the mean of the control group. The obtained \underline{t} of 2.11 when

compared with the 2.03 required <u>t</u> was .08 larger than essential for significance at the .05 level of confidence.

TABLE V

COMPARISON OF MEAN SCORES ON STEP LISTENING TESTS:

MATCHED PAIRS FROM EXPERIMENTAL GROUP AND

CONTROL GROUPS

Group	N	Obtained Mean	S.D.	Obtained t	Required t
Experimental	20	66.10	9.60	2 11	2 024
Control	20	60.75	8.60	2.11	2.03*
*Significan	at the .	05 level of c	onfidence.		

III. SUMMARY

The over-all results showed rather convincingly that this program could effectively teach critical listening skills to a wide variety of learners. The experimental group showed a gain in listening ability as a result of direct training of critical listening skills for the six weeks period. The experimental group excelled in all obtained <u>t</u> score comparisons with the control groups. The greatest obtained <u>t</u> score difference was recorded with control group B where the obtained <u>t</u> of 3.59 was 1.56 more than the required <u>t</u> of 2.03 to show significance at the .05 level of confidence. The next largest differential was between the experimental group and group C with an obtained <u>t</u> of 2.76 showing .73 higher than the 2.03 required for the .05 level of confidence. The comparison with

group A indicated that the obtained \underline{t} of 2.33 was .30 larger than the required \underline{t} of 2.03, and group D showed an obtained \underline{t} of 2.31 which was .28 more than necessary for the 2.03 significance at the .05 level of confidence.

In the comparison of scores for matched pairs of experimental and control groups, the obtained \underline{t} of 2.11, which showed .08 greater gain than the required \underline{t} of 2.03, was significant at the .05 level of confidence.

Since Tables I, II, III, IV, and V, showed statistical significance at the .05 level of confidence, it would appear that the difference would be supported by other samples.

For further information see Appendix A.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A brief review of the study may enable the reader to gain an over-all picture of the need for direct training in critical listening, and how the students in the study were affected by special emphasis upon improving the ability to understand, interpret, apply, and evaluate oral communication.

I. SUMMARY

In the teaching of language arts in the elementary grades the child's language skills which he brings from his home environment must be adapted to his enlarging social contacts, improved in quantity and quality, and developed adequately for successful performance in listening, speaking, reading and writing, to meet personal and social requirements in and outside of school. Through his activities the child develops a feeling of the importance of oral and written language as it meets his needs for communication in daily living.

Elementary pupils spend from half to two-thirds of their school day listening. In every area of the school program listening experiences are offered for explanation, understanding, identification, and appreciation. Factors that influence the kind of listening a pupil does include interest, maturity level, experience background, listening readiness, general ability, kind of material, motivation, physical surroundings, and listening habits.

To improve children's ability to listen critically, they must be ready to listen, know why they are listening, think actively of what the speaker is saying, and review the speaker's ideas in their own words.

Using the same method of analyzing oral communication as they do reading, they must select the main idea, the sequential order of events, important details, and must evaluate the speaker's words.

The purpose of this study was to develop a tentative general theory about the significance of critical listening instruction as an effective experience when incorporated into the language arts program. The procedures to be used in attempting to achieve this purpose were: (1) to review research on the subject of listening skills, (2) to formulate from this research recommended considerations for an effective listening program, (3) to study current listening practices in the fourth grade of the Selah Public Schools by testing with SRA and STEP Listening Skills tests, (4) to teach the general divisions of listening: accurate, critical, and appreciative, (5) to analyze the value of such teaching, and (6) to recommend methods for improvement of teaching critical listening skills in the fourth grade.

The major hypothesis to be tested was: instruction in critical listening at the fourth grade level would be significant in developing more effective listeners as opposed to incidental instruction provided by the regular language arts program. It was also expected that the results obtained would be usable in evaluating the need for critical listening instruction in the elementary school.

It was the purpose of this chapter to summarize the study, and to make recommendations appropriate in terms of the conclusions reached in this investigation.

II. CONCLUSIONS

The investigator of this study was satisfied that fourth graders, in all groups, were capable of average listening comprehension at the beginning of the study, that the experimental group progressed under direct training of critical listening, and that learning was not uniform in all areas of listening skills.

Inasmuch as the average score for all groups at the beginning of Part Two was 78 per cent comprehension, the positive value of learning to listen, as developed in Part One of the regular language arts program, was indicated.

With the experimental group showing statistical significance at the .05 level of confidence over the control groups in the ability to benefit from direct instruction in listening, the implication that critical listening instruction was an effective experience should be obvious. As our technological society increases, students require optimum academic learning to function as participating, productive citizens. Critical listening would mean economy in learning.

III. RECOMMENDATIONS

On the basis of the finding of this study, the following recommendations for the inclusion of indirect and systematic instruction designed to improve listening ability in any classroom are made.

(1) That each step in critical listening be taught as a specific skill, that listening be taught as an active learning process, and that children understand what it is they are trying to learn from these

specific skills and these enjoyable listening activities, that will be meaningful to them, both in and out of the school room.

- (2) That both a direct and an indirect approach to training in listening ability improve listening skills, and that both approaches be used. However, the direct approach should be used predominantly because in this form of instruction the child becomes more aware of the skills involved.
- (3) That a series of oral selections on subject matter content, followed by questions regarding inferences as well as main ideas, important details, and sequential order of events, be used in teaching children to listen.
- (4) That children become aware of their ability to listen, through testing for content and interpretation of oral communication, and through personal records of listening growth in all fields.
- (5) That children discover the slants, biases, and tricks of propagandists, so that they will be in a position to judge the validity of statements used in oral and written communication.
- (6) That individual differences in listening readiness be an initial factor in the program, and that individual differences be recognized and attended throughout the learning process.
- (7) That the teacher help children to understand how listening should be used as a tool in learning how to learn.
- (8) That many enrichment experiences be introduced to stimulate continual use of understanding, interpreting, applying and evaluating oral communication.

BIBLIOGRAPHY

- 1. Blake, Howard. "A Code for Teachers of Listening." Elementary English, 39:48-49, January, 1962.
- Brown, James. "The Construction of a Diagnostic Test of Listening Comprehension." <u>Journal of Educational Research</u>, 43:626-636, April, 1950.
- 3. Burns, Paul. 'Teaching Listening in Elementary Schools." Elementary English, 38:11-14, January, 1961.
- 4. Canfield, Robert G. "How Useful are Lessons on Listening?"

 <u>Elementary School Journal</u>, 62:147-151, December, 1961.
- 5. Cypreansen, Lucile. "Listening is a Skill." Childhood Education, 37:268-270, February, 1961.
- 6. Duker, Sam. 'Goals of Teaching Listening Skills in the Elementary School." Elementary English, 38:170-174.
- 7. Duker, Sam. "Listening." Review of Educational Research, Vol. 31, No. 2:145-151, April, 1961.
- 8. Duker, Sam. "Frontiers in Listening." An Address to the Annual Meeting of the Washington Speech Association, March, 1965.
- 9. Educational Developmental Laboratories. <u>Listen and Read Program</u>, Huntington, New York, 1963.
- 10. Elwell, M. Ardell. "Developing Listening and Speaking Skills in the Elementary School Child." School Department Newsletter, Harcourt, Brace & World, Inc., New York, 1964.
- 11. Harris, Chester W. Encyclopedia of Educational Research. New York: MacMillan Co., 1960, pp. 309-310.
- 12. Jameson, Marshall C., and Wm. Vernon Hicks. <u>Elementary School</u>

 <u>Curriculum from Theory to Practice</u>. New York: American

 <u>Book Co.</u>, 1960, p. 245.
- 13. Lewis, Maurice S. "Teaching Children to Listen." Education, 80:455-459, April, 1960.
- 14. Lundsteen, Sara W. "Teaching and Testing Critical Listening in the Fifth and Sixth Grades." <u>Elementary English</u>, 41:743-748, November, 1964.
- 15. Miner, Dr. Adah. <u>Learning Our Language</u>. Midwest Program on Airborne Television Instruction, Lafayette, Indiana, 1963, pp. 1-35.

- 16. Nichols, Ralph G. "Ten Components of Effective Listening." Education, 75:292-302, January, 1955.
- 17. Nichols, Ralph G., and Paul H. Cashman. "The Approval Factor in Listening." Education, 80:268-271, January, 1960.
- 18. Parker, Don H. Reading Laboratory, Science Research Associates, Inc., Chicago, 1961, p. 108.
- 19. Pratt, Edward. "Experimental Evaluation of a Program for the Improvement of Listening." Elementary School Journal, March, 1956, pp. 315-320.
- 20. Rankin, Paul. 'The Importance of Listening Ability." English
 Journal, 17:623-630, October, 1928.
- 21. Russell, David H., and Elizabeth F. Russell. <u>Listening Aids</u>

 <u>Through the Grades</u>. New York: Bureau of Publications,

 Teachers College, Columbia University, 1959, pp. 58-100.
- 22. Schwartz, Sheila. "What is Listening?" Elementary English, 38, No. 4, April, 1961, pp. 221, 224.
- 23. <u>Sequential Tests of Educational Progress</u>. Educational Testing Service, Los Angeles, 1957.
- 24. Smith, Nila Banton. Reading Instruction for Today's Children.
 Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1963, pp. 18-60.
- 25. Spache, George D. Reading in the Elementary School. Boston: Allyn and Bacon, 1964, 356 pp.
- 26. Stone, Clarence R. New Practice Readers Book C. Webster Publishing Company, United States of America, 1962.
- 27. Taylor, Stanford E. <u>Listening</u>. National Education Association of the United States, April, 1964.
- 28. Trivette, Sue E. "The Effect of Listening for Specific Purposes."

 Journal of Educational Research, Vol. 54, No. 7, March, 1961, pp. 276-277.
- 29. Van Dalen, Deobold B., and William J. Meyer. <u>Understanding</u>
 <u>Educational Research, An Introduction</u>. New York: McGraw-Hill
 Book Company, Inc., 1962, 432 p.
- 30. Wilt, Miriam A. "A Study of Teacher Awareness of Listening As A Factor in Elementary Education." <u>Journal of Educational Research</u>, 43:625-636, April, 1950.

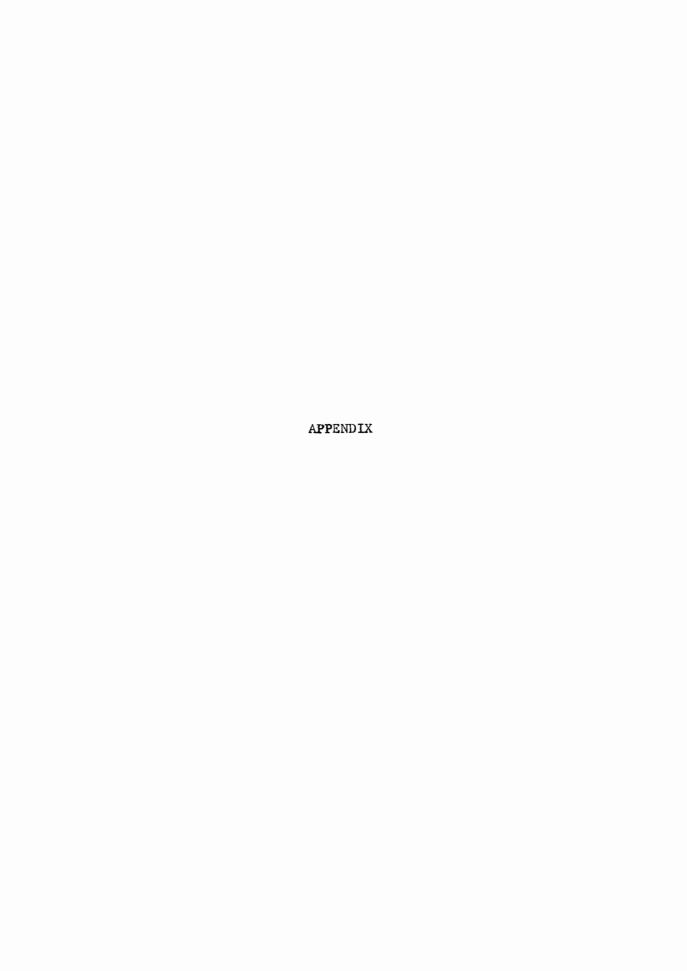


TABLE I COMPARISON OF CONTROL GROUP A WITH EXPERIMENTAL GROUP

Pupil	IBC ¹	IBR ²	\underline{sra}^3	<u>1Q</u>	<u>Age</u>	STEP ⁴
AF1	62	67	55	122	10	65
AF2	60	64	44	119	9-10	64
AF3	58	61	52	131	10-4	68
AM4	56	59	55	123	10-4	65
AM5	54	56	49	104	10-2	61
AF6	53	58	45	109	10-1	55
AM7	51	42	49	113	10-6	69
AM 8	50	58	53	108	10	67
AM9	48	47	43	103	9-11	65
AM10	46	47	49	100	10	62
AF11	46	42	45	109	10-2	52
AF12	45	52	41	103	9-8	60
AM13	44	40	51	104	10-3	65
AF14	43	43	56	109	10-8	62
AM15	42	41	46	99	10-2	57
AM16	40	39	43	112	10-9	45
AF17	37	41	32	88	10-9	30
AM1 8	36	31	48	109	10-4	66
AF19	34	33	50	111	10-2	71
AF20	_33	32	40	<i>-</i> ∙97	10-6	56
M=10 F=10	938	953	946			1205
	G.E. 4.69	G.E. 4.76	Mean 78.8%			Mean 75.3%
Group M=13						
F=7	G.E. 4.69	G.E. 4.86	Mean 78.4%			Mean 82.6%

¹ Iowa Basic Skills Test Composite
2 Iowa Basic Skills Reading Score
3 SRA Listening Test Score out of 60 items
4 Sequential Tests of Educational Progress test score out of 80 items

TABLE II COMPARISON OF CONTROL GROUP B WITH EXPERIMENTAL GROUP

Pupil	IBC	<u>IBR</u>	SRA	<u>1Q</u>	<u>Age</u>	STEP
BM1	61	72	51	131	9-11	70
BF2	60	72	52	101	10-5	62
BF3	59	61	52	127	10	72
BF4	56	65	41	102	9-11	61
BF5	54	52	50		10	60
B M 6	52	54	51	107	10-1	57
BF7	52	52	53	107	10-7	62
BF8	52	54	43	109	10-5	68
BF9	50	55	42	102	10	45
BF10	49	50	55	102	10-2	56
BM11	48	51	47	115	10-1	56
BF12	47	47	48	109	9-10	58
BF13	47	51	47	101	10-3	63
BM14	38	39	41	106	9-10	60
BF15	38	23	39	92	10-8	51
BM16	38	45	46	94	10-8	62
BM17	37	40	46	87	10-6	41
BM18	36	39	42	107	10-8	46
BM19	35	39	45		9-11	60
BF20			_50	92	9-11	47
M= 8	937	983	941			1147
F=12						
	G.E. 4.69	G.E. 4.9	Mean 78.4%			Mean 72.3%
Group M=13	E:					
F=7	G.E. 4.69	G.E. 4.86	Mean 78.4%			Mean 82.6%

TABLE III COMPARISON OF CONTROL GROUP C WITH EXPERIMENTAL GROUP

Pupil	<u>IBC</u>	IBR	SRA	<u>10</u>	Age	STEP
CF1	63	66	55		10-4	73
CF2	59	64	50	122	10-1	69
CM3	54	60	52	111	10	64
CF4	54	58	46	103	9-9	63
CF5	51	52	45	88	10-4	62
CF6	51	62	53	119	9 - 8	59
CF7	50	44	49	119	10-5	67
CF8	49	43	52	116	9-10	62
CF9	48	45	41	97	9-9	45
CF 10	48	45	43	113	9-10	62
CM11	47	54	48	103	9-10	73
CM12	45	40	44	107	10-5	51
CM13	45	48	43	115	9-8	60
CF14	45	49	42	93	9-9	45
CF15	44	41	46	108	10-4	62
CM16	41	44	52	108	9-8	62
CF17	41	42	43	93	9-9	48
CM18	38	42	49	96	10-1	61
CM19	33	38	41	99	10	50
CM20	31	22	47	. 93	10	67
M=8	937	957	941			1186
F=12						
	G.E. 4.69	G.E. 4.78	Mean 78.4%			Mean 73.9%
Group M=13	E:					
F=7	G.E. 4.69	G.E. 4.86	Mean 78.4%			Mean 82.6%

F=7 G.E. 4.69 G.E. 4.86 Mean 78.4% Mean 82.6%

TABLE IV COMPARISON OF CONTROL GROUP D WITH EXPERIMENTAL GROUP

Pupi1	IBC	IBR	SRA	ĪŌ	Age	STEP
DF1	58	64	51	123	10	67
DM2	57	66	52	111	10-4	72
DF3	56	56	55	109	9-8	65
DF4	56	65	48	107	10-1	68
DM5	52	58	54	123	10-1	71
DM6	50	58	52	103	9-8	71
DF7	50	57	49	103	10	64
DF8	48	43	45	112	10	55
DM9	47	47	49	123	10-2	65
DM10	47	51	44	116	9-9	60
DF11	46	45	47		10- 6	48
DM12	46	43	50	107	10-7	63
DM13	44	45	47	99	10-1	60
DF14	41	45	36	100	9-11	47
DM15	37	44	48		10	64
DF16	34	34	40	79	9-11	41
DM17	31	30	30		11-1	22
DF18	47	54	51	100	10-2	64
DM19	47	48	52	83	10- 3	57
DM20	<u>45</u>	51	46	99	9-9	59
M=11 F=9	939	1004	946			1183
	G.E. 4.69	G.E. 5.02	Mean 78.8%			Mean 73.9%
Group M=13	E:					
F=7	G.E. 4.69	G.E. 4.86	Mean 78.4%			Mean 82.6%

TABLE V

EXPERIMENTAL GROUP

Pupil	IBC	IBR	SRA	<u>1Q</u>	Age	STEP
EM1	57	58	51	97	10-4	65
EM2	56	55	50	116	9-9	69
EM3	54	51	48	89	10-3	63
EM4	53	39	37	112	9-9	54
EM5	52	59	54	119	10-4	65
EM6	51	50	53	113	10-3	75
EM7	50	40	53	104	9-9	74
EM8	49	62	52	95	10	71
EF9	49	49	48	116	10-4	70
EF10	48	43	47	104	10-6	68
EF11	48	62	48	104	10	73
EM12	45	53	49	109	9-10	71
EF13	43	52	45	88	10	68
EM14	43	37	40	100	10-4	61
EF 15	43	48	51	108	10	62
EF 16	42	45	43	101	10	63
EM17	42	33	47	109	9-10	59
EF18	41	45	38	81	10-4	54
EM19	40	43	44	96	10	68
EM20	31		44	99	9-8	69
M=13 F=7	937	973	942			1322
	0 7 / 60	O E / O/	M 70 /9	,		36 00 69

G.E. 4.69 G.E. 4.86 Mean 78.4%

Mean 82.6%

TABLE VI

COMPARISON OF PAIRS FROM CONTROL GROUPS AND EXPERIMENTAL
GROUP MATCHED ON THE IOWA BASIC SKILLS
TEST COMPOSITE SCORES

Pupil	IBC	IBR	SRA	<u>10</u>	Age	STEP
EM1	57	58	51	97	10-4	65
DM1	57	66	52	111	10-4	72
EM2	56	55	50	116	9-9	69
AM2	56	59	55	123	10-4	65
EM3	54	51	48	89	10-3	63
AM3	54	56	4 9	104	10-2	61
EM4	53	39	37	112	9-8	54
BM4	52	54	51	107	10-1	57
EM5	52	59	52	119	10-4	65
DM5	52	58	54	123	10-1	71
EM6	51	50	53	113	10-4	75
AM6	51	42	49	113	10-6	69
EM7	50	4 0	53	104	9-8	74
DM7	50	58	52	103	9-8	71
EM8	49	62	52	99	10-2	71
AM8	50	58	53	108	10	67
EF9	49	49	48	116	10	70
CF9	49	43	52	116	9-10	62
EF10	48	43	47	104	10-4	68
DF10	48	43	45	112	10	55
Mean of Control Group		60.75	Experimen	ntal Group	66.1	
Median of Control Group			62	Experimen	ital Group	68
Mode of	f Control G	roup	62	Experimen	tal Group	68

TABLE VI (continued)

Pupil	IBC	IBR	SRA	ĪŌ	Age	STEP
EF11	48	62	48	104	10-5	73
CF11	48	43	43	113	9-10	43
EM12	45	53	49	109	10	71
CM12	45	48	43	115	9-8	60
EF13	43	52	46	88	9-11	68
AF13	43	43	56	109	10-8	62
EM14	43	37	40	100	10-3	61
DM14	44	45	47	99	10-1	60
EF15	43	48	51	108	10	62
CF15	44	41	46	108	10-4	62
EM16	42	33	47	109	9-10	59
AM16	42	41	46	99	10-2	57
EF17	42	45	43	101	9-11	63
CF17	45	49	46	108	10-4	62
EF18	41	45	38	81	10-3	54
DF18	41	45	36	100	9-11	47
EM19	40	43	47	96	10	68
AM19	40	39	43	112	10-9	45
EM20	31	39	46	99	9-8	69
CM20	31	22	47	93	10	67