AN ANALYSIS OF CERTAIN ASPECTS OF A LISTENING TRAINING PROGRAM CONDUCTED AMONG COLLEGE FRESHMEN AT MICHIGAN STATE COLLEGE

Thesis for the Degree of Ed. D.

MICHIGAN STATE COLLEGE

Charles E. Irvin

1952

This is to certify that the

thesis entitled

An Analysis of Certain Aspects of a Listening Training Program among College Freshmen at Michigan State College

presented by

Charles E. Irvin

has been accepted towards fulfillment of the requirements for

Ph.D. degree in Education

Milosh Muntyan
Major professor

Date May 19, 1952

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By

Charles E. Irvin

A THESIS

Submitted to the School of Graduate Studies of Michigan State College of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Department of Education

1952

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Final examination: 10:00 A.M., Monday, May 19, 1952.

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AN ANALYSIS OF CERTAIN ASPECTS OF A LISTENING TRAINING PROGRAM AMONG COLLEGE FRESHMEN AT MICHIGAN STATE COLLEGE

By

Charles E. Irvin

AN ABSTRACT

Submitted to the School of Graduate Studies of Michigan State College of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Department of Education

Year 1952

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Charles E. Irvin

THESIS ABSTRACT

This study was conducted to test the efficacy of teaching listening by direct instruction. Among the many problems that evolved, three became most important: 1) the actual selection and arrangement of teachable materials; 2) the integration of seven units of listening instruction with the college course of Written and Spoken English which is required of all freshmen at Michigan State College; 3) the evaluation of instructional results.

Materials were selected and arranged by a committee of four members of the Written and Spoken English Department staff. Seven units of listening instruction of ten minutes each were then integrated with the one-hour lecture sections of the course in the Fall Quarter, 1951. These lecture sections were eight in number and each contained between 200 and 300 students.

To facilitate evaluation of results, the design of the study was kept simple. Four lecture sections, two meeting in the morning and two in the afternoon, were designated as the experimental group which received the seven units of listening instruction. These seven units were taught, one per week, over a period of seven weeks. The other four lecture sections, also evenly distributed between morning and afternoon periods, were designated as the control group and received only the regular work of the course. Both groups were tested twice: once prior to the initiation of the training program; once immediately after the completion of the program. The study was tightly controlled in order to eliminate or minimize the many variables operative in the listening activity.

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The listening tests employed were those constructed by Ralph Nichols at the University of Minnesota. Four 12-question tests, designed to measure listening comprehension, were used; two were given as the pretest and two were given as the post-test. Each of the tests covered a different subject-matter area. The materials over which the tests were given consisted of short recorded lecture segments in the subject area corresponding to each test.

It was hoped that the testing would reveal three things: 1) whether or not a difference would exist between groups after one group had received listening instruction; 2) whether or not a difference in listening skill existed between the sexes; 3) whether or not a difference in listening skill existed according to the time of day that students listened.

Two major statistical procedures were utilized to evaluate the instructional results. An analysis of variance was used to weigh the differences which might exist because of sex and time of day. An analysis of covariance was used to weigh and adjust the differences that might exist between groups due to pre-existing differences in listening aptitude. Many of the variables operative to produce such pre-existing differences were thus minimized in effect. In addition, the extreme low and extreme high scoring brackets were examined for an analysis of instructional results.

While the experimental and control groups each contained approximately 1200 students, a random sampling of 500 for each group was used as the test population for the evaluation of results.

As an outgrowth of this study, the following conclusions appear to be justified: 1) a sufficient number of the processes involved in

listening can be positively influenced by teaching as to result in improvement in listening as measured by behavior on the tests used in this study; 2) with reason, the listening training given could be credited for creating a highly significant difference between the experimental and the control groups; 3) with reason, the listening training given could be credited for resulting in a very appreciable gain among the below-average listeners, as measured by pretest behavior; 4) the listening training given was apparently ineffective among the above-average listeners, as defined by pretest behavior; 5) male students appeared to be significantly superior to female students in performance on the listening tests used in this study; 6) time of day appears to have had no significant influence upon listening ability as measured by the tests used in this study.

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INTRODUCTION

Wordsworth was perhaps over-optimistic when he wrote:

"The eye, it cannot choose but see;
We cannot bid the ear be still."

He implies that we are constantly listening. Through the years, other implications have been made. The first line of a famous poem about Paul Revere begins, "Listen, my children, and you shall hear". The white cross-bars that mark the intersection of railroad and highway bear the words, Stop, Look, Listen. One would assume, therefore, that from poetry to safety warnings, something accrues from listening. This is further emphasized in classrooms. Teachers in the primary grades clap their hands and admonish the children to listen. In later stages of education, instructors request students to take notes in class lectures. The twilight years of graduate study find professors beginning their lectures without benefit of admonition or request, merely expecting mature students to listen.

No matter where the observer may turn, to classroom, business office, conference room, living room, United Nations assembly, or Korean truce meeting, the implication is clear. Listening is an important phase of our lives; listening results in the acquisition of information and the understanding of spoken symbols; listening is often followed by changes in human thinking and behavior.

This study, therefore, concerns itself with a communications skill which is familiar, important, much used, and functional.

Statement of the Problem

Specifically, the problem with which this study is concerned is:

> "An Analysis of Certain Aspects of a Listening Training Program Conducted Among College Freshmen at the Michigan State College."

From this analysis, it is hoped that some light may be shed upon what can be taught in such a program and upon the results of such teaching. The study will be probed to discover three things:

1. If there is a difference between the listening test results of the group receiving training and the group not receiving it.
2. If there is a difference in test results between the sexes.
3. If there is a difference in test results between the times at which groups convene for listening; morning versus afternoon.

The end result of this study is not to justify this one particular program of listening training. Nor is it to justify the materials or methodology employed. Rather, this study represents an adventure into the teaching of listening. The accumulation of data will serve as a

foundation for further study; for further development of materials and methods leading toward a sound program of instruction.

Michigan State College includes a course in Written and Spoken English in its basic curriculum. This course obligates the department to teach the four communications skills: reading, writing, speaking, and listening. The background of information in listening is meager compared to the other three skills. Studies such as the one under discussion can broaden the horizons, extend the information, and build a firmer basis for instruction in this much neglected area of the study of communications skills.

Definition of Terms

By the term "Analysis" is meant an exploration and evaluation of the results found to be present among the two groups involved in this training and testing program.

The term "Certain Aspects" limits this study to the first quarter of a three-quarter training program. Michigan State College divides its school year into quarters rather then semesters. The Department of Written and Spoken English planned and executed three quarters of listening training. Each quarter became the responsibility of each of three members of the listening committee of the department. The writer accepted the responsibility of the fall quarter which involved: a listening pretest; seven units of listening instruction; and a listening post-test. The winter and spring quarters are being reported as separate studies by two other persons.

The term "Listening" needs a larger definition. In the first place, listening is to be differentiated from hearing, although the layman often uses the two synonymously. Hearing is the awareness of sound. You may hear a foreign language; you may hear the motor of your car. Listening is more than hearing. It is important to remember that, for the purpose of this discussion, listening involves the comprehension of what is heard. Listening to a foreign language involves the understanding of that language. Listening to the motor of your car involves the listening for something: a knock, or a jumping spark.

There have been several definitions of listening. This writer has, in several printed articles, defined it as "reception and comprehension; reception and evaluation of orally presented materials". This definition takes into account the different kinds of listening as described by Ralph Nichols:[1]

1. Discriminative listening to informative materials. (sometimes referred to as discriminatory listening)
2. Critical listening to persuasive materials. This involves evaluation as well as comprehension.
3. Appreciative listening to any aural presentation gratifying to the senses.

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1. Ralph Nichols. "Teaching of Listening", Chicago Schools Journal, XXX (June, 1949), 274.

Another definition is that given by Blewett:[1]

> "Listening is the process of attaching meaning to the spoken word".

This definition is more general and perhaps is more widely accepted.

For the purpose of this discussion, listening will imply comprehension.

The term "Listening Instruction" also needs a larger definition. One of the major projects of the Listening Committee of the National Society for the Study of Communication is to define listening instruction. In the annual report of this committee,[2] the following is the consensus about what constitutes listening instruction:

1. Determination of the need for listening instruction.
2. Determination of the objectives of listening instruction.
3. The planning of a series of experiences designed to enable the student to achieve these objectives.
4. The establishment of procedures to evaluate instructional results.

With respect to the planning of experiences, a survey reveals three differing modes of instruction now in use:

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1. Thomas Blewett, "An Experiment in the Measurement of Listening at the College Level", Journal of Communication, I (May, 1951), 50.

2. Charles Irvin, "Report of Committee on Listening Comprehension", Journal of Communication, I, No. 2 (November, 1951) 66.

1. The listening-laboratory technique such as that used at the University of Minnesota. Students listen to recordings of lecture segments and take progressively more difficult tests over the materials contained therein.
2. The coordination of listening assignments with speaking assignments in speech classes.
3. The direct instrutional method such as that used at Air University and at Michigan State College. This direct method is accomplished by lectures about listening and lectures on how to listen more effectively. Such lectures may be hour-long and complete within themselves, or they may be shorter and integrated with lectures on other subjects.

In this discussion, listening instruction is to be understood as the direct-instruction method in which lectures on how to listen are integrated with other informational lectures on entirely different subjects.

Specifically, the listening instruction involved in this study was composed of seven instructional units of ten minutes each, each of which preceded a twenty-five minute lecture on a different subject. Where time permitted, the instruction was broadened to include a checking period of ten minutes following each twenty-five minute informational lecture. For the purpose of this study, listening instruction is meant to be training in discriminative listening to informative materials.

These details are more fully explained in Chapter IV. The training materials are fully reproduced in APPENDIX A.

The term "College Freshmen" refers to the first year students registered in the required course of Written and Spoken English at Michigan State College. These students were divided into two groups:

1. The experimental group, approximately 1400 students, who received the seven units of listening instruction.
2. The control group, approximately 1400 students, who did not receive listening instruction.

During the discussion of this study, the terms experimental and control will be used to identify, respectively, those students receiving listening training and those not receiving it.

Basic Assumptions

The launching of a program of this scope is preceded by research and thought relative to assumptions about listening and listening instruction. Before listing the assumptions favorable to the teaching of listening, the writer wishes to discuss two basic assumptions that have perhaps been primarily responsible for the apparent neglect of this phase of communications skills.

Teachers of listening are often asked why there is such a sudden interest in the subject. Discussion with the average layman reveals that he feels listening to be simply a matter of hearing acuity and

intelligence and that education can do little about either. Nichols,[1] in a series of interviews with educators and non-educators, received such answers consistently; listening is a matter of hearing and intelligence. Perhaps, then these are the two basic assumptions upon which the long years of neglect are founded. Nichols insists that to explain listening in these terms is the same as saying that reading is merely a matter of eyesight and intelligence; that speaking is merely a matter of articulation and intelligence.

Research up to this point indicates that hearing acuity is related to listening skill, but not to an important extent. At least, this has been reported by Nichols.[2] Actually, some students with hearing loss have, in some experiments, done better than those with normal hearing. Blewett[3] reported that three students with hearing loss sufficient to justify clinical treatment scored 4.23 above the mean score on one listening test.

While it is obvious that intelligence and listening are closely related, statistical data indicates that the correlation between the two is not high enough to predict success in listening. Nichols reported a

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1. Nichols, op. cit., 273.

2. Ralph Nichols, "Factors in Listening Comprehension", Speech Monographs, XV, No. 2 (1948) 8.

3. Blewett, op. cit., 56.

correlation of 0.54; Johnson[1] reported 0.33; and Knower[2] reported a still lower correlation of 0.27.

Because of such findings, the lack of concern with which the educational world has treated listening has been dissipated to a great extent, and we are faced with problems of discovery of factors and relationships which are more significant than hearing and intelligence have so far proved to be.

Despite the small amount of research that has been done in the field of listening, it is possible to assemble some basic assumptions. It is best to divide these assumptions into two categories: assumptions about listening itself; and assumptions about listening instruction:

I. Basic Assumptions about Listening:

A. Listening is the process of attaching meaning to the spoken word, or to aural symbols.

B. Listening is a very significant medium of learning.

1. While listening does not guarantee learning, learning frequently results from listening.

C. Because of differences in experience and intelligence, individuals differ in their abilities to comprehend the spoken word.

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1. Kenneth Johnson, "Effect of Training on Listening", Journal of Communication, I (May, 1951), 60.

2. Knower, Phillips, Koeppel, "Studies in Listening to Informative Speaking", Journal of Abnormal and Social Psychology, XL (February, 1945), 80.

II. Basic Assumptions about Listening Instruction:

A. Research clarifying good and bad listening habits, and the skills, concepts, and attitudes upon which these are based is desperately needed.

B. Although all teachers and parents should be concerned with the formation of good listening habits, teachers of English and speech have a major responsibility for the listening skills of students.

C. According to research, listening can be improved through training.

1. Research indicates many similarities between listening and reading comprehension. Because good reading habits can be taught, this assumption seems reasonable. Training experiments in listening make this assumption more reasonable.

D. Instruction in reading does not provide adequate training for listening.

1. Despite the similarities between these two skills, there are some differences:

a. The receptive mechanisms are different.

b. Listening usually involves sight and hearing, while reading involves only the sense of sight.

c. Reading is usually a personalized activity,

done alone; listening is usually a socialized activity, done in groups.

d. Listening involves adjustment to the speaker's rate of speaking, while reading is accomplished by adjustment to the pace of the reader himself.

E. Listening comprehension, manifested in test behavior, is measurable in quantitative terms, provided a valid and consistent test is used.

F. Because, for this study, listening is defined as attaching meaning to the spoken word, meaningful materials, orally presented, must constitute the basic content of the evaluation instrument.

G. Because listening comprehension inevitably involves some kind of response, either concealed or overt, the quantity and quality of such comprehension can be measured in terms of observable human behavior.

H. If research[1] supporting increased efficiency in listening after training can be trusted as either indicative or conclusive evidence, then it seems reasonable to assume that some or all of the processes that are involved in listening can be taught.

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1. It seems advisable to include in this study only that research which is immediately applicable and pertinent to listening instruction. References will be made in the last part of this introductory chapter and in Chapter Two to these pertinent materials. However, excellent summaries of listening research, not immediately applicable to this study, may be found in the following sources:

Justification of the Problem

An attempt to incorporate listening into the curriculum is likely to uncover two kinds of negative attitudes: apathy and antagonism. The national listening committee, in reporting its list of difficulties and problems encountered in the teaching of listening, rates these two attitudes as highly obstructive. Apathy stems, perhaps, from the two assumptions previously mentioned: listening is merely a matter of hearing acuity and intelligence, and little can be done about either. Antagonism seems to arise out of resentment, as if the protagonists were trying to legally adopt into the educational family a child who has no right to be there. Therefore, to continue the metaphor, any justification of such legal adoption must show that the child has, in reality, been there all the time but has been neglected. In short, has listening come of age; is it entitled to a place in the educational sun?

Harry Goldstein, Reading and Listening Comprehension at Various Controlled Rates, Contributions to Education, No. 821, New York: Bureau of Publications, Teachers College, Columbia University, 1940.

Ralph Nichols, Factors Accounting for Differences in Comprehension of Materials Presented Orally in the Classroom, Unpublished doctor's thesis, State University of Iowa, 1946.

Miriam E. Wilt, A Study of Teacher Awareness of Listening As a Factor in Elementary Education, Unpublished doctor's thesis, Pennsylvania State College, 1949.

Frank R. Elliot, "Memory for Visual, Auditory, and Visual-Auditory Material", Archives of Psychology, No. 199 (May, 1936) 5.

Brown,[1] in his justification, presents a number of reasons why listening should be taught. He cites Rankin's[2] study in which it was found that forty-five per cent of our daily lives is spent in listening. Brown's article analyzes a study made by Walter Barnes[3] in which it was discovered that ninety-eight per cent of the out-of-school activities of 7000 school children was spent in oral activity. A quick survey of one's personal daily schedule will further substantiate claims that the frequency of listening activity is high.

But frequency is not the sole justification for including listening in the curriculum. Brown offers, further, that listening is more difficult than reading; that it is as important as, if not more important than, reading; that people do not automatically and without effort learn to listen effectively.

To further substantiate the worth of listening, one can turn to studies in the field of education, such as the Wilt[4] study. This indicated that, even in the elementary grades, pupils are expected to listen 57.5 per cent of the day. One can turn to the field of business and human relations and find quotations like these from W. E. Bennett, Coordinator of Training for the Cities Service Petroleum Corporation:

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1. James Brown, "Why Not Teach Listening", School and Society, LXIX (February 12, 1949) 141-53.

2. Paul Rankin, "Listening Ability.. Its Importance..Measurement..and Development", Chicago Schools Journal, XII (June, 1930) 417-20.

3. Brown, op. cit., 150.

4. Wilt, op. cit.

> "In our group discussion analysis of mutual problems, we have found that whether any problem is in the field of organization or in human relations, in 98 per cent of the cases, the root of the problem has been a failure of communications. Someone has failed to understand what someone else meant."[1]

> "There are spoken communications and there are written communications. But our basic problem is with spoken communications. And I think there is good reason . . . good man-to-man relations and understanding cannot be achieved by written manifestos and memoranda."[2]

We can, in fact, turn to any phase of modern life and find ample proof that listening is important.

But, granted that all of Brown's reasons, and others' reasons, for the teaching of listening are acceptable, there are two questions which remain to be answered before a justification for its inclusion in the curriculum is complete:

1. Are we so ineffective in our present listening skill that we need to teach it?
2. Can it be taught?

In answer to the first question, most of the research tends to indicate that listening is superior to reading for comprehension of uncomplicated and relatively easy materials, but, that for more complicated and difficult materials, reading surpasses listening. It follows, therefore, that we are either to be content with this situation or devise ways and means to keep orally presented materials simple and uncomplicated.

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1. W. E. Bennett, "The Need for Effective Speech in a Technological Society", Journal of Communication, I (May, 1951) 17.

2. Ibid., 18.

Further, research seems to indicate that an individual's listening skill slips below his reading skill when the teaching of reading is introduced. The Nashville[1] study shows that as pupils progress from the third grade on through High School, their listening ability, superior prior to this stage, falls behind reading skill. It must be remembered that while the pupil's listening skill begins to slow up, his need for listening does not diminish. Much of his further education is given him by the lecture method of instruction. His dependence upon speaker-listener relationships in the business and professional world is easily apparent. In a study made at Michigan State College in 1948,[2] the writer discovered the following things:

1. Less than 27 per cent of the students tested could pick out the main points of a well-organized informational talk.
2. Students tested had approximately 60 per cent accuracy when asked to draw inferences and make judgements based on information presented orally to them.

Summarizing the various studies that have been made of the efficiency of listening, it is possible to see these two indications:

1. Participants in the studies seem to be from 25 per cent to 60 per cent efficient in their ability to comprehend orally presented materials.

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1. Listening Abilities of Pupils in the Nashville Public Schools, Nashville Public Schools, Nashville, Tennessee, September, 1950, 4.

2. Charles E. Irvin, Unpublished Study, 1948.

2. Efficiency will vary among people and within the same person among varying materials. Some people will listen very efficiently to directions, but they will be less effective in other types of speaker-listener activities.

Therefore, in answer to the first question, listening efficiency, as far as present diagnosis can detect, is at such a level as would merit attempts to improve it.

Can listening be taught? Chapter II will concern itself with the studies that have been made of training programs. There is evidence to show that such programs have more than an outside chance of success if properly conducted. The chief concern seems to have been whether the information about listening was teachable and whether the processes involved in listening were of a teachable nature. Obviously, we do not teach listening just by making students listen. To argue that an increase in the amount of listening activity will result in an improvement of listening efficiency is not pedagogically sound. The poor listener may simply continue to cultivate his bad habits. Educators are often prone to say, "Practice makes permanent, not perfect".

Bess Sondel[1] has written that a good listener will do five things:

1. "See" an idea when he hears it.
2. Distinguish between essential points and details.
3. Distinguish between facts and opinions.

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1. Bess Sondel, "Everybody's Listening", National Parent-Teacher, (January, 1951), 14.

4. Distinguish between information and persuasion.

5. Make up his own mind about what has been said.

The first four of these five lend themselves to instruction. The fifth might be helped by instruction in the first four.

In Nichols' doctoral study, he listed 38 factors which, to some degree, influenced the listening comprehension of his test group. Of these, 19 seem to lend themselves to instruction, either directly or indirectly. These 19 factors are:

Reading comprehension
Recognition of correct English usage
Size of listener's vocabulary
Ability to make inferences
Ability to structuralize a speech
Listening for main ideas as opposed to specific facts
Use of special techniques to improve concentration
Emotional adjustment to the speaker's thesis
Ability to see significance in the subject discussed
Judging speaker effectiveness
Respect for listening as a method of learning
Susceptibility to distraction
High school speech training of the listener
Experience in listening to difficult expository material
Social ease of the listener
Self-satisfaction of the listener
Economic attitudes of the listener
Worries of the listener about personal problems
Note-taking ability

A similar list of factors, 30 in number, were discovered at Michigan State College in a study of "critical incidents"[1] in listening. Of this list, 20 factors seem to lend themselves to instruction, either directly or indirectly:

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1. "Critical incidents" refers to the Flanagan method currently being used in the five year study by the American Council on Education. See bibliography.

Clarity of points
Ability to grasp central idea
Ability to see some significance
Clearness of the organizational plan
Ability to see connections between parts of the talk
Clearness of sentence structure
Vocabulary
Necessity for compensating for speaker's weaknesses
Amount of experience in listening to difficult expository material
Feelings about benefits to be derived from efficient listening
Ability to make inferences
Ability to anticipate the nature and direction of the development of talk
Previous discussion of the subject
Emotional attitude toward the subject
Distractions
Note-taking ability
Necessity for adjusting to varying rates of speech
Ability to memorize
Amount of previous direct listening training
Personal worries about grades, etc.

Therefore, upon diagnosing the process of listening and studying the factors which seem to be present, one is lead to believe that much of listening may be influenced by teaching.

If a comparison is made between reading and listening, the same conclusion is apparent. The correlation between reading and listening has been measured from a low of 0.27 to a high of 0.82. It is generally believed to be about 0.78; this was the figure reported by Goldstein[1] in 1940. Since it is well established that training in reading can increase effectiveness in reading, and since reading and listening, despite their differences, are similar skills, it can be assumed that listening can also be taught.

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1. Goldstein, op. cit.

One final justification of this problem needs to be made. It is one of obligation. Institutions, like Michigan State College, which have courses in communications skills, have announced their intentions of teaching the four skills: reading, writing, speaking, listening. Therefore, any study which attempts to find out why, how, and with what success any one of the skills can be taught is justified in the light of the announced objectives. More effective communications demand that we forsake the comfortable position which assumes these skills to be acquired with a usable competence at an early age; that we continue to probe and analyze; that we continue to teach and test our way toward better materials and better methodology.

The implication throughout this introductory chapter has been that an attempt will be made to teach listening and evaluate the residue of that instruction.

CHAPTER II

CHAPTER II

SURVEY OF LITERATURE

A survey of the literature in the field of listening instruction cannot be very extensive. The experiments and programs have been very few in number and very recent. As was explained in Chapter One, the discussion here will be confined to studies that have been made in the teaching of listening. The great bulk of literature available in the field of listening covers comparisons between reading and listening, analyses of listening habits, and the like.

We shall be concerned with nine studies in instruction that appear to be most significant for the purpose of this study. It will be recalled that such instruction has generally been categorized as follows:

1. The listening laboratory.
2. The coordination of listening exercises with speech assignments in speech classes.
3. The direct-instruction method.

Most of these nine studies will fall into one or more of these classifications.

Chronologically, the first study was begun in 1947 by Kenneth O. Johnson[1] at Macalester College in St. Paul, Minnesota. The study is

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1. Kenneth Johnson, "The Effect of Classroom Training upon Listening Comprehension", Journal of Communication, I (May, 1951), 57.

being reported in verbatim form because this author feels that the detail as given by Johnson is important enough to the results achieved to warrant no deletion. The report also serves as an example of the direct-instruction technique in the teaching of listening.

According to Johnson:[1]

> "The purpose of this research was to determine the effect of an experimental course in listening comprehension on the listening comprehension ability of a group of 112 second semester college freshmen . . . .
>
> "The experimental course reported here is intended to be no more than perhaps a guide or indication as to the direction which listening instruction should take in the future . . . . The author considered the situation in which the college student was engaged, and determined that a course in listening designed to help the student in the classroom lecture type situation would constitute the most beneficial approach. The materials used in the exercise-lectures which comprised the experimental course were selected with this approach in mind. Nine exercise lectures were developed and systematically recorded on a Brush-tape recorder. They consisted of: 1) a short lecture on the listening technique to be practiced that day or a review of the technique developed the preceding day; 2) series of numbers, presented in a manner similar to a digit-memory test; 3) brief lectures and paragraphs selected for practice of the listening techniques. Each exercise-lecture was composed of approximately thirty minutes of recorded material.
>
> "Besides standard instruction in posture and general physical attitudes most conducive to good listening, the students were motivated by describing to them the need for better listening techniques. One of the brief lectures discussed listening for topic sentences. . . others presented the technique of repetition . . . additional suggestions were made as to how to check new information for accuracy.
>
> "The listening tests were recorded abridged forms of the American Council on Education Cooperative English Test on Reading Comprehension (C2). All of the statistical results were arrived at

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1. Ibid., 58-61.

through the use of raw scores taken from these tests. The listening tests were recorded under conditions similar to those of the exercise-lectures.

"The experimental group was composed of 112 freshmen students selected at random from the second semester communication program at Macalester College. The control group was selected by matching each member of the experimental group with a student from the communication course according to sex, intelligence, and listening ability.

"The sequence of administration of this experiment was: 1) a listening test was given to all of the second semester freshmen; 2) the groups were matched on the bases previously stated; 3) the experimental group was given the nine exercise-lectures at the rate of three per week; 4) . . . the control group occupied itself with a project devoted to pronunciation and spelling; 5) the second listening test was administered to both experimental and control groups at the conclusion of the experimental course or approximately three weeks after the presentation of the first listening test; 6) the last of the series of listening examinations was given to both groups during the last week of the regular semester or approximately eleven weeks after the second listening test. The eleven weeks constituted a rest period in that no listening instruction of any kind was given.

"An analysis of the scores achieved by the experimental group on the second listening examination, after having been subjected to the experimental course, as compared to the first listening test clearly demonstrates that the experimental group made significant improvement at the 1% level on the second examination. The standard error was 0.58 and the critical ratio was 4.1. These statistics can be interpreted as meaning that a difference as large as occurred could result from chance less than once in 10,000 times. The control group, during the same period, showed only such improvement as could be attributed to chance 74 times out of 100. The standard error was 0.50 and the critical ratio 0.33.

"A comparison between the second and third listening examinations produced equally striking results. It will be recalled that the third examination was given to both the experimental and control groups eleven weeks after the conclusion of the listening course and the second listening test. An analysis of the scores of the experimental group indicates a statistically significant difference at the 1% level. However, the difference was in the direction of regression . . . the control group, however, had regressed to a position significantly lower than that attained on the pretest. The experimental group at the conclusion of the third test was just

> about at the same level of listening ability as it was before being subjected to the course. The control group had significantly less ability than it had at the beginning of the semester."

Johnson concludes that the experimental group made significant improvement after training and held its own far better than the control group after the long rest period of eleven weeks.

In 1948, Ralph Nichols began a laboratory method for the improvement of listening at the University of Minnesota. In an article[1] published in 1949 he writes:

> "Do students actually improve in listening ability through direct training? We have no evidence of any kind to the contrary, and considerable evidence is accumulating which points to a strongly affirmative answer.
>
> "In terms of results obtained on the two types of measuring instruments we are now using, we find that in a typical term the total freshmen population on the average respond correctly to about 50 per cent of the items on the tests. Special training is given the lowest-scoring 10 per cent. At the end of twelve weeks, when all freshmen are retested with the same measuring instruments, the average score on the retest of the group given direct training in listening has each term been found to approximate closely the average retest score of those who have not had direct training . . . the inference that the gains made by the group given direct training are real ones is strengthened when it is remembered that the directly trained students are drawn from considerably less than one-fourth of the total range in listening ability."

The methodology employed by Nichols at Minnesota is clinical in nature. Those students indicating a need for remedial training in listening on the basis of the first test are subjected to laboratory techniques in which they listen to records of lecture segments, take

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1. Ralph Nichols, "Teaching of Listening", Chicago Schools Journal, XXX (June, 1949), 278.

progressively more difficult tests over the recorded materials, and receive instructional aid along the way. The fact that the lowest 10 per cent can attain a score approximating the average for the entire freshman class after such training, and can repeat this performance term after term, lends a heavy endorsement to this type of listening instruction.

Stephens College uses a type of instruction that could best be called indirect counselling. The students listen to college lectures, gather afterwards and discuss the varying information and attitudes each gets from the same lecture, analyze their own personal listening abilities and deficiencies, and confer with members of the speech staff. Such a system perhaps fits into the category of integrating listening exercises with speech class assignments, although the conferences with instructors are unique with Stephens as far as this writer can ascertain. Recently, Stephens has employed a listening test composed of two short talks, excerpts of longer speeches; one is on the subject of Literature and the other is taken from a Baccalaureate address given in May, 1949. Each talk is followed by a 20 multiple-choice question test. Miss Betty Bebout, of the department of speech, reported the following range of scores and their means in successive months:[1]

October, 1949: 12 - 34 with a mean at 25.

January, 1950: 14 - 37 with a mean at 28.

February, 1950: 15 - 37 with a mean at 26.

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1. Personal letter received from Miss Betty Bebout, April 21, 1950.

Although very little else is known about the tests and testing procedure, if these results are statistically dependable, one might say that there is indication of improvement reflected here.

In 1949, Kenneth Frohardt,[1] a student at the University of Nebraska, conducted a study in the teaching of listening. Fifteen listening projects were given to 89 students in regular college speech classes. One of these projects was given only to an experimental group, consisting of 43 of the total of 89 students. It was a 32-minute lecture dealing with the significance of listening and the factors involved in this skill. The experimental group was further motivated by being told that the project was designed to improve listening skill.

Two tests were given to all 89 students. Using a formula[2] of Garrett's, Frohardt found that on one test no significant difference was revealed between the experimental and control groups, but on the second test, the score difference of 4.46 proved to be significant in 73 chances out of 100, favoring the experimental group.

While the study is meager in detail, and the instruction given was short, the residue of improvement seems to fit the pattern of all such attempts, no matter how expert or inexpert the instruction or test administration.

Also in 1949, the writer conducted a small experiment in listening training at Michigan State College. Based on an earlier analytical

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1. Kenneth Grohardt, A Study of the Teaching of Listening, Unpublished master's thesis, University of Nebraska, 1949.

2. H. E. Garrett, Statistics in Psychology and Education, Longmans, Green and Co., New York, 1926, 129-134.

study of some 2400 students, a five-question test was prepared over a 45-minute talk on the subject of "Radio As A Means of Communication". This test was designed to ferret out the weaknesses discovered in the earlier study. These weaknesses appeared to be in the following areas:

1. Students could not visualize the structure of informative talks.
2. Students remembered detail but failed to associate that detail with the major points of such talks.
3. Students began to listen too late to get vital initial material.

Three of the five questions in the test were aimed at these specific weaknesses.

Prior to this talk on "Radio As A Means of Communication" and the administration of the five-question test, a matched group of 75 students was divided into groups: twenty students received one hour of instruction in listening; fifty-five students had no such help given them.

After the talk and the subsequent test, the group which had received the one hour of listening instruction had a mean score 10.2 points above that of the group which had received no instruction. To be sure, neither a group of such small size nor a test of so few items would withstand the withering inspection of acceptable statistical procedure. However, there seemed to be some significance in the fact that the "trained group" did an average of 3.2 points better on each of the three test questions which had been aimed at the weaknesses already mentioned.

One lecture on listening, no matter how long, can scarcely be called adequate instruction. Yet, in the Frohardt study mentioned earlier, the instruction consisted of but 32 minutes. At Maxwell Field Air Base, the listening instruction given by the staff of the Air University consists of a single one-hour lecture. The Air University staff feels that much is accomplished in that one hour. It is regrettable that no measurement of the efficiency of this instruction has been made.

At the convention of the National Society for the Study of Communication, held in New York in December, 1950, Mr. Ralph Widener, of the University of Missouri, reported as follows:

> "My own study, completed this year at the University of Oklahoma, was primarily concerned with developing a manual of instruction on 'How To Listen', that could be used along with the testing of listening comprehension, that might result in some positive effect upon the skill of comprehending orally-presented materials.
>
> "From the evidence received, it was discovered that there was some significant gain in comprehension after specific instruction had been administered."[1]

There seems to be no valid reason to go into the detail of Mr. Widener's study to isolate statistics. His conclusion that a significant gain was made is his own and was apparently acceptable to his graduate committee. More important at this point might be the outline of his manual of instructions:[2]

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1. Paper read before the Listening session of the national convention of the NSSC, New York, December, 1950.

2. Ralph Widener Jr., Instructional Manual on How to Listen, From an unpublished master's thesis, University of Oklahoma, 1950.

Section 1	Introduction
Section 2	Knowing the Rules of Good Speaking
Section 3	Preparation for Listening
Section 4	Awareness of the Techniques of Persuasion
Section 5	Beginning Your Listening
Section 6	Reacting to What is Heard
Section 7	Note-taking and Outlining
Section 8	Conclusion

At that time, December, 1950, Mr. Widener's manual was the only one of its kind in a form presentable for distribution. His approach to the teaching of listening falls into the category of direct instruction, as did the Frohardt and Irvin studies mentioned earlier.

At Whittier College, in 1950, David Krueger[1] conducted a study in listening instruction. There were 72 students in his experimental group and 72 in his control group. They were matched on the basis of scores achieved on the National Council of Education intelligence test. His listening tests consisted of some items from the tests used at the University of Minnesota and some true-false items based on classroom lectures.

Krueger's instructional materials consisted of two lectures, one on the basic eight points of good listening and the other on the psychological aspects of good listening. In addition, students in the experimental group wrote five papers based on listening to college convocation speakers.

Using arithmetic means, he reported gains up to 64 per cent in favor of the experimental group. Again, this study is of the direct-instruction type.

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1. David H. Krueger, A Study of the Results of Teaching Factors of Listening Comprehension to College Freshmen in the Basic Communications II Course, Unpublished master's thesis, Whittier College, 1950.

Up to this point, it is obvious that these studies are lacking in sufficient control of the many variables that are operative in the listening situation. Some of the variables have been handled through statistical manipulation; some have not. The admitted presence of all forms of motivation in the training sessions might lead us to suspect that part of the reported gains are not genuine; at least they may not be direct results of the training itself. This is perhaps less true of the Johnson and Nichols studies than of the others.

A final study to be reported here is the best controlled among the nine. The writer comes to this conclusion not only from the study itself as reported, but also from his own observation of the experiment. Reference is being made to the work of Heilman,[1] conducted during 1949 and 1950 at Michigan State College.

His students were selected from the second term of the Basic College course in Written and Spoken English. The experimental group numbered 234; the control group numbered 220. These students were matched on the basis of listening pretests and psychological tests. The experimental group received 20 minutes of listening instruction each week for six weeks, totalling two hours. The instruction, as well as the tests, were recorded. The listening tests, administered prior to and after the training period, had reliability indexes of 0.80 and 0.84 respectively.

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1. Arthur Heilman, An Investigation in Measuring and Improving the Listening Ability of College Freshmen, Unpublished doctor's thesis, State University of Iowa, 1950.

Heilman found that there was a total gain through the entire experimental group, but statistically significant gains were registered only among those students who placed in the lowest quartile on the first test. In short, Heilman, following the experience of Nichols of the University of Minnesota, concludes that the original "ineffective" listener benefitted most from this training. He further concludes that the results justify the time and effort that the training involves.

Of the nine studies reported here, seven were of the direct-instruction type, one was of the laboratory type, and one was a combination of the integration of listening with speech class assignments and the individual conference. All nine studies reflect, in varying degrees, a gain in listening effectiveness after training. While many of these studies leave much to be desired in the way of expert control of variable operative in the listening situation, there is still some hopeful basis for further research in listening instruction. Information is not available as to the present status of such instruction at the institutions where these studies have been conducted. The exception to this is the University of Minnesota, where the listening laboratory has been expanded beyond the needs of the remedial group even as far as servicing the faculty who wish to avail themselves of its help.

There are other studies under way, but to this writer's knowledge, none have progressed to the point where they might be publicly appraised. As was stated in Chapter One, a retarding factor in experimentation has been the lack of instructional materials and measuring devices. The

reader should judge such studies as those reported here in the light of the comparative newness of listening research. Those involved in such infant research ask the indulgence of those who judge, until such time as listening "comes of age."

CHAPTER III

CHAPTER III

HISTORICAL BACKGROUND OF THIS STUDY

When Michigan State College began its course in Written and Spoken English in 1944, it included, as one of the objectives, the improvement of listening skill. Listening is incorporated into the four skills of communication. At that time, the planners of the course permitted one hour per week to be devoted to the training of listening. It was looked upon as a listening laboratory. Therefore, the course was set up in the following fashion:

A. Four hours per week in class devoted to speaking, writing, and reading.

B. One hour per week in a lecture session devoted to listening.

In order to get the course underway, the original staff planned and gave a series of informative lectures in this one-hour period. The content of these lectures consisted of materials about language, its development, its use, and its analysis.

When this writer joined the staff of Written and Spoken English in 1945, the lecture program was as described above. The syllabus for the course announced, however, that training in listening was an integral part of the curriculum. Without being unduly critical, it can be said that at this time the only listening training extant was simply

practice in listening. In this respect, it could be said that this department had done little more toward training listeners than any other department that offered the lecture experience to its students.

As interest in listening began to grow among certain staff members, and as listening began to attract attention at other institutions, certain timid steps were taken toward the development of a more positive program. In 1947, this writer conducted a diagnostic study, to which reference has already been made, and discovered a fairly accurate listening skill profile for the average freshman at this institution. Similar studies were reported at other colleges and universities. Results of such studies indicated that the listening skill of college students was far below the level on which college teachers supposed it to be; particularly those teachers who used the lecture method of teaching. The inference was drawn that mere practice in listening was not sufficient to improve the skill.

At about this time, the department of Written and Spoken English created a listening committee composed of four staff members who were deeply interested in this field. This committee was charged with the responsibility of probing whatever literature was available and setting up some positive program of instruction.

After months of study and discussion, the committee planned a four-unit training program to be tried out in the winter term of 1950. Accordingly, four of the regular staff lecturers were asked to reduce the time of their lectures from fifty minutes to twenty-five so that

listening instruction could be given in the remaining time. Each committee member taught one of the listening training sessions. While no evaluation was made in terms of statistical measurement, many things of value were learned:

1. The students were interested and the motivation seemed sincere.
2. There were many "bugs" in the program that needed treatment and revision before a more ambitious effort could be made.
3. Lecturers who formerly had argued that it would be impossible to cut their lectures to twenty-five minutes had found that they could do a very satisfactory job in the shortened time.
4. Enough of the total staff had become interested that cooperation seemed assured if a larger effort were to be made.

The experience gained from this four-unit training program precipitated immediate plans for a full year's training program to begin in the fall term of 1950. The committee began the work of revising some of the previously used materials and sought new materials which would need to be added. Eventually, the committee had on paper the training materials for eighteen units of instruction. Seven were to be given during the fall term, six in the winter term, and five in the spring term.

It was decided by the department and the listening committee that such a program should be measured for effectiveness so that evidence could be secured on which to base its continuation or its abolition. Each of the three terms of training were given to each of three members of the listening committee as his complete responsibility, from materials and planning down through the final evaluation procedure.

Every effort was made to conduct the program in such a way that the results of the evaluation would be reliable. Advice and cooperation of other college departments were sought in order to insure the success of the program. Acknowledgment has already been made of the valuable assistance received. All of the detailed problems and adjustments are fully described in Chapter Four.

With no intention of influencing either the reader or the results of this study, it might be added here that the program proved successful enough that it became an integral part of the Written and Spoken English course in the fall term of 1951. The materials used originally by the committee of four were rewritten so that all of the staff lecturers could administer the training along with giving their regular informational lecture.

CHAPTER IV

CHAPTER IV

PROCEDURE

As indicated in Chapter Three, the organization of the Written and Spoken English Course at Michigan State College provides a natural listening laboratory. The course meets five hours weekly: four hours of recitation during which speeches are given, papers are written, discussions take place, and instruction is given; there is, in addition, one hour of lecture. This lecture is the listening laboratory. Prior to the inauguration of the listening training program, these lectures consisted of fifty-minute talks about communication and language. The listening training program was integrated with these lectures. The entire process of integration as well as other aspects of this study will be described in this chapter.

THE SUBJECTS OF THE STUDY

All incoming freshmen must take Written and Spoken English. In the fall term of 1950, the enrollment extended slightly beyond 2600. All of these students attended one of the one-hour lecture sections provided in the schedule of the course. Each lecture section averaged from 250 to 300 students.

Because one of the members of the listening committee was endeavoring to construct and validate a new type of test of listening, it was agreed

that he should be given two of the ten lecture sections with which to work. Therefore, eight lecture sections, or approximately 2400 students, remained to be involved in the listening study under discussion here. These eight sections were scheduled thus:

Lecture A ..... Monday 8-9

Lecture B ..... Monday 1-2

Lecture D ..... Tuesday 2-3

Lecture E ..... Wednesday 9-10

Lecture F ..... Wednesday 3-4

Lecture G ..... Thursday 10-11

Lecture J ..... Friday 11-12

Lecture K ..... Friday 2-3

These eight lecture sections were divided into two groups of four. One group of four was designated as the Experimental Group and was to receive the listening training. The other group of four was designated as the Control Group and was to go on receiving the regular fifty-minute informational lecture as all previous sections had done. Each group, experimental and control, was so picked that each would have both morning and afternoon sections. The resulting division is reported as follows:

The Experimental Group

Lecture A ..... Monday 8-9

Lecture B ..... Monday 1-2

Lecture E ..... Wednesday 9-10

Lecture F ..... Wednesday 3-4

Number: 1200 students.

The Control Group

Lecture D ..... Tuesday 2-3

Lecture G ..... Thursday 10-11

Lecture J ..... Friday 11-12

Lecture K ..... Friday 2-3

Number: 1200 students.

As can be seen, each group contained two morning and two afternoon sections. Each group also contained the same number of students. The experimental sections were chosen on Monday and Wednesday so that lecturers who had to give both a twenty-five minute and fifty-minute version of their lecture would not have to give both versions on the same day.

THE INTEGRATION OF LISTENING INSTRUCTION WITH THE LECTURES

Since all of the regular informational lectures in the course had been fifty minutes in length, the integration of the listening training program with these lectures involved:

1. The determination of the specific informational lectures with which such training units would be integrated.
2. The reduction in time and content of these chosen lectures from the previous fifty-minutes to twenty-five minutes in order to provide time for listening instruction.
3. The determination of which two weeks during the term would be devoted to measuring the students' listening ability.
4. The determination of which members of the listening committee

would handle each of the instruction units. Because each member of the committee was also a regular staff lecturer, conflicts had to be avoided.

The final outcome of the integration was as follows:

1. The fall term's listening instruction program would consist of seven units.
2. The first two regular course lectures should remain in full length and not be shortened by the addition of listening instruction.
3. The second week of the term should be utilized for the listening pre-test; the tenth week of the term should be utilized for the listening post-test.
4. The remaining six informational lectures should be cut to twenty-five minutes in length to provide time for the listening instruction.
5. The seven units of instruction should be divided among the listening committee as follows:

Unit 1 and Unit 2 ..... Mr. Irvin

Unit 3 and Unit 4 ..... Mr. Dow

Unit 5 ..... Mr. Blanding

Unit 6 and Unit 7 ..... Mr. Hill

Included in each of the training units were two types of instruction:

A. Ten minutes of direct instruction about listening and how to listen; this to precede the twenty-five minute information lecture.

B. Ten minutes devoted to a "check-out"[1] period following the informational lecture.

The original plans, therefore, included seven direct-instruction talks about listening and seven check-out periods. However, only six informational lectures[2] remained with which to integrate seven training units. Consequently, in order to maintain the training program as planned, the check-out periods for units 1 and 2 were abandoned and the direct instruction periods for these two units were combined into one. Thus, unit 1 was given in the ten minutes preceding the informational lecture, and unit two was given in the ten minutes following the same lecture. This adjustment assured that all seven units of instruction would remain intact. The character of these first two units was such that the deletion of the check-out periods represented no serious omission.

Later in the term, during the ninth week, another alteration had to be made. A change in College plans relative to the Thanksgiving holiday left an insufficient number of school days in the ninth week to cover all of the experimental sections with instruction. Therefore, the instruction originally planned for this ninth week was added to the eighth week. Once again, the check-out period had to be abandoned to make room for another unit of direct instruction.

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1. The "check-out" period refers to ten minutes of oral questioning, after the twenty-five minute informational lecture, by the listening instructor. The purpose of this period was to check on the degree of application, made by the students, of the listening instruction of the day to the informational lecture of the day.

2. See items 2, 3, and 4 on page 39.

Thus, after integration and alteration, the listening training program actually consisted of seven units of direct instruction, each ten minutes in length, and three ten-minute check-out periods. The program was preceded by a listening pre-test and was followed by a listening post-test. Instead of being spread over six weeks, exclusive of the testing periods, it became concentrated in five weeks.

In total, the program amounted to seventy minutes of direct instruction and thirty minutes of check-out time, or one hour and forty minutes. Adding to this the two fifty-minute testing periods, the training and testing amounted to two hundred minutes, or three hours and twenty minutes.

Transposing these figures into per cent of the total time, ten hours, devoted to Written and Spoken English lectures, we find:

A. 16.6 per cent spent in direct listening instruction.

B. 16.6 per cent spent in the testing of listening.

The full ten-week schedule, as it actually took place, will be found on the next page.

The Listening Training Program Integrated with the Lecture Program in Fall Term, 1950

Date	Week	Description
Sept. 25-29	1	Informational lecture, "The Importance of Communication"; fifty minutes.
Oct. 2-6	2	Listening Pre-test; fifty minutes.
Oct. 9-13	3	Informational lecture, "Emotional Blocks to Communication"; fifty minutes.
Oct. 16-20	4	Listening training unit 1, "Listening As a Fourth Skill"; ten minutes. Informational lecture, "How and Why Language Changes"; twenty-five minutes. Listening training unit 2, "The Kinds of Listening"; ten minutes.
Oct. 23-27	5	Listening training unit 3, "Preparation for Listening"; ten minutes. Informational lecture, "Levels of Usage"; twenty-five minutes. Listening checkout period; ten minutes.
Oct. 30 - Nov. 3	6	Listening training unit 4, "Exercising Emotional Control in Listening"; ten minutes. Informational lecture, "The Development of American English"; twenty-five minutes. Listening checkout period; ten minutes.
Nov. 6-10	7	Listening training unit 5, "Structuralizing during Listening"; ten minutes. Informational lecture, "The Dictionary"; twenty-five minutes. Listening checkout period; ten minutes.

Date	Week	Description
Nov. 13-17	8	Listening training unit 6, "Listening for Main Points"; ten minutes.
		Informational lecture, "The Development of Language in the Individual"; twenty-five minutes.
		Listening training unit 7, "Listening for Comprehension"; ten minutes.
Nov. 20-24	9	Informational lecture, "The Personal Aspects of Communication"; fifty minutes.
Nov. 27 - Dec. 1	10	Listening Post-test; fifty minutes.

THE INSTRUCTIONAL MATERIALS

The instructional materials utilized in this study were compiled by the various members of the departmental listening committee. Their sources were few. Nevertheless, each member was able to gather data pertinent to his assigned segments of the seven unit training program.

After each member had collected his data, he submitted it to the entire committee where it was re-worked and styled for presentation as instruction. The materials had to be further adjusted to meet the ten-minute time limit for presentation which was imposed upon the committee by the character of the program.

In addition to the materials for direct instruction, suitable questions for discussion had to be written. These questions constituted the bulk of the check-out period. They were designed to integrate with the direct-instruction materials presented in each unit and to tie in to the materials presented in the preceding unit. Further, they were designed to elicit answers which would reveal the effectiveness or non-effectiveness of the listening that had been done in that particular unit. The questions were to be asked orally by the listening instructor.

The training materials and questions for each check-out period may be found in APPENDIX A.

THE LISTENING TESTS

As has been stated, two tests were given during this study to all of the students registered in the Written and Spoken English lecture

sections. The first test, or pretest, was administered prior to the beginning of the listening training program. The second test, or post-test, was administered immediately following the seven-unit listening training series.

Adequate measuring instruments in the field of listening were scarce. There was available to us only the Nichols tests which were constructed at the University of Minnesota and used extensively there. In all, the Nichols tests number six:

One in Literature

One in Economics

One in Biology

One in Sociology

One in Psychology

One in Chemistry

These tests contained questions on materials presented in recorded ten-minute lecture excerpts. They have been analyzed as follows:

> "To test the listener's comprehension of material, 20 multiple-choice questions were constructed to cover each of the 10-minute lecture excerpts. In building the original test of 120 items, an attempt was made to construct questions which would test the listener's grasp of important points or ideas. Despite this attempt to emphasize understanding, a substantial number of factual questions appear.
>
> "The six subtests were returned to the original contributors for checking.
>
> "After the test battery, six tests, were administered to the test population of 200, a complete item analysis was made. To avoid weighting any of the six parts of the battery, 72 of the 120 questions were retained. (this brought the total to 12 questions per test) The discriminating power of the 72 was determined through the use of the Flanagan table of values of the product-moment coefficient of correlation in a normal bivariate

> population corresponding to given proportions of successes. Correlations of .20 or higher, as read by the Flanagan table, after computing the proportion of successes in the 27% scoring highest and lowest on the continuous variable, are said to indicate test items of "good" discriminating power; correlations of .30 "extremely good"; correlations of .50 are so high as to be regarded as fortunate and due to chance.
>
> "The Median coefficient of correlation of the 72 retained items, indicative of discriminating power, was found to be .36. The median coefficient of correlation of the 12 retained items on each test was as follows:

Literature	.30
Economics	.43
Biology	.40
Sociology	.31
Psychology	.30
Chemistry	.36

> "The degree of difficulty for each of these 72 items ranged from 20 to 98 per cent. The items tended to cluster about the 60 per cent level; slightly easier than would be the ideal examination."[1]

Because these tests contained only twelve questions each, it was decided that two tests should be given in the pre-test period and two in the post-test period. Thus, twenty-four questions were given in each of the testing periods. The tests employed in each period were as follows:

Pre-test:

Biology
Sociology

Post-test:

Literature
Economics

An item analysis of each of these four tests will be found on the next pages.

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1. Ralph Nichols, Factors Accounting for Differences in Comprehension of Materials Presented Orally in the Classroom, unpublished doctor's thesis, State University of Iowa, 1948, 16-22.

TABLE I

ITEM ANALYSIS OF LISTENING PRE-TEST

Item	Low 27%	High 27%	Difficulty Average in %	Power
		Biology		
1	76	93	84.5	.305
2	93	100	96.5	.325
3	55	81	68	.295
4	61	93	77	.455
5	74	94	84	.36
6	44	87	65.5	.48
7	46	85	65.5	.435
8	11	33	22	.31
9	26	65	45.5	.40
10	85	100	92.5	.475
11	44	91	67.5	.545
12	76	96	87	.38
			Median	.40
		Sociology		
1	67	87	77	.275
2	55	87	71	.365
3	54	78	66	.27
4	22	55	38.5	.35
5	89	98	93.5	.30
6	87	96	91.5	.24
7	91	98	94.5	.275
8	94	100	97	.30
9	76	96	86	.48
10	54	81	67.5	.305
11	67	89	78	.31
12	46	91	67.5	.53
			Median	.31

TABLE II

ITEM ANALYSIS OF LISTENING POST-TEST

Item	Low 27%	High 27%	Difficulty Average in %	Power
		Literature		
1	76	91	83.5	.255
2	46	69	57.5	.24
3	57	85	71	.335
4	65	89	77	.33
5	65	83	74	.235
6	55	74	64.5	.21
7	96	100	98	.23
8	55	74	64.5	.21
9	37	81	59	.465
10	52	83	67.5	.355
11	85	96	91.5	.305
12	87	98	93.5	.355
			Median	.30
		Economics		
1	52	87	69.5	.415
2	35	76	55.5	.42
3	39	80	59.5	.43
4	57	89	73	.40
5	87	100	93.5	.445
6	63	87	75	.315
7	44	83	63.5	.425
8	39	83	61	.47
9	15	57	36	.46
10	46	81	64.5	.365
11	50	93	71.5	.535
12	65	96	80.5	.50
			Median	.43

The reliability coefficients[1] of the tests used in this study are as follows:

Pre-test:

	r
Biology, Sociology	0.74

Post-test:

Literature, Economics	0.93

These coefficients compare favorably with the recently completed Brown-Carlson listening tests.[2] Their reliabilities are 0.79 and 0.75. Since the Nichols tests and the Brown-Carlson tests are the only extant measuring devices in the field, these reliabilities must serve as adequate.

The validity of the Nichols tests has not been established. This very obvious deficiency is primarily due to the lack of suitable evaluation devices against which such tests could be contrasted or with which they could be compared. Such a deficiency exists in all other measuring devices in this field. Validity, then, must be assumed. Since the materials over which the tests are given are presented orally; and since

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1. Ibid., p. 20. Computed by the Kuder-Richardson formula:

$$r = \frac{n}{n-1} \cdot \frac{s.d.^2 - fpq's}{s.d.^2}$$

n the number of test items
s.d. the standard deviation of the examination
f the frequency
p the percentage of successful answers
q the percentage of unsuccessful answers

2. Brown-Carlson Listening Tests, In process of publication, World Book Company, Yonkers-on-the-Hudson, New York, 1951.

the tests themselves are designed to measure the degree of comprehension of these materials present in the listener; and since, for the purpose of this study, listening has been defined as "attaching meaning to the spoken word" it must be assumed, therefore, that we are measuring listening ability as expressed in test behavior. The correlations of these tests with other factors that might be considered variables in the listening situation are not sufficiently high to warrant argument that these tests might not be valid at all. Some of these correlations are:[1]

Intelligence (ACE) 0.5344

Reading (Iowa Silent) 0.4602

Scholastic rank 0.2791

Vocabulary (Cooperative English) .. 0.4946

As has been stated, the materials over which the tests were given, were ten-minute lecture excerpts, each having been prepared by the department represented by the content; i.e. the Biology department prepared the materials for the Biology lecture, etc. To eliminate the variable of differing voices, one person made all the recordings.

In this study, the technique of testing was as follows:

Step 1. Upon entering the lecture room, each student was handed an IBM answer sheet and an IBM pencil.

Step 2. After the class was seated, the administrator of the test, the same person for all sections,

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1. Ibid.

gave brief instructions as to what to print on the answer sheet:

Name

Student number

Sex

Age

Lecture section (A, B, etc.)

Step 3. The administrator then made this announcement: "You will hear two recorded lectures. After you hear each record, you will be asked to answer some questions. DO NOT TAKE NOTES".

Step 4. The first of the two records was played. Checks were made throughout the room to insure that all could hear.

Step 5. Immediately after the first record, test questions were distributed. The 300 test sheets were distributed in less than 50 seconds.

Step 6. The students were given adequate time so that all could answer all of the questions. No speed factor was introduced.

Step 7. The second record was played.

Step 8. The second test was distributed.

Step 9. Adequate time was given for the completion of the second test.

Step 10. The administrator made this announcement:

"As you file out, place your materials, tests, answer sheets, and pencils in the places which will be indicated to you by attendants at the door."

The same procedure was followed in both testing periods, pre-test and post-test, with one exception in the post-test. In order that only those students in the experimental group who had heard all seven units of listening instruction might be included in statistical tabulation, it became necessary to determine by some means who had and who had not heard all units. Therefore, to the preliminary announcement by the administrator in which he gave instructions as to name, age, etc., these words were added:

"If you heard unit one (identification was given as to name of instructor, subject, etc.) draw a line through the number 121 on your answer sheet."

This was continued through all of the units until each student could indicate, by drawing lines through given numbers, what listening units he had heard and not heard. Aside from this one variation, the testing procedure for the post-test did not vary from that which has just been itemized step by step for the pre-test.

In this fashion these tests were given to over 2400 students; approximately 1200 in the experimental sections and approximately 1200 in the control sections. All answer sheets were scored by the IBM scoring machines and the scores from all answer sheets were in turn

recorded upon an IBM card which was a duplicate of the student's lecture section card.

At a later time, when tabulation of results was in order, the original answer sheets for the post-test for the experimental group only were checked, and only those on which students had indicated that they attended all listening training units were kept. Further details of this selection method will be given later in this chapter.

Two further explanations are necessary before leaving this section on testing: 1. what determined the choice of these particular tests; 2. why were different tests given in the post-test period?

With regard to the choice of particular tests, several things had to be kept in mind. Previous knowledge of a subject might be a significant variable in any results obtained; therefore, tests should be chosen in which the incoming freshman was least likely to profit by previous experience. Yet, since this study was just one part of a year-long study, certain of these areas had to be reserved for future testing in succeeding terms. In short, the testing areas which best avoided the variable of previous experience could not be used up for the first term study only. Further, choices had to be made so that, in any single battery of two tests, the materials from one would be least likely to aid the student in answering questions on the other. With such things in mind, Biology and Sociology were chosen for the pre-test; not because the subjects are unrelated, but because the factual materials present were widely different. In addition, most incoming students would be about equal in their high

school knowledge of Biology, and most students would have little or no knowledge of Sociology as such.

Literature and Economics were chosen for the post-test because most students would be about equal in their high school knowledge of Literature, and most students would have an insufficient background in Economics to skew the results. Courses taken by freshmen are not usually in these fields. Therefore, an accumulation of knowledge during this term seemed unlikely. In addition, these materials, as they were treated in the lecture excerpts and in the tests over these excerpts, appeared to be more difficult. The median of the degree of difficulty is also slightly higher for these tests; 73 as compared to 71 for the pre-test. Thus, this study could be spared the often found criticism of "stacking". Should a less difficult test have been used for post-test purposes, such criticism would have been in order if results had been favorable.

Why were different tests used for the post-test? Naturally, had the same test battery been given both times, results could have been probed for the improvement of each group over itself as well as over the other. Upon consultation with the graduate advisors of this study and the assisting members of the college Examining Board, it was felt that since so many variables already exist in any listening activity, and since this study was to be as closely controlled as possible, the retest factor, in the case of administering the same test twice, might be such that it would significantly alter any results achieved. Since it would be difficult to weigh and deduct the influence of the retest factor, it was decided to avoid it entirely by giving a different set of tests and

materials to be tested. This limits the results to a comparison between the experimental and the control only, and rules out any possibility of comparing the experimental or control groups with themselves.

The tests in full form will be found in APPENDIX B.

THE PERSONNEL

Two groups of personnel were directly involved in the instruction part of this study: 1) the members of the listening committee; 2) the regular staff lecturers.

The four members of the listening committee undertook the responsibility of conducting the training sessions. From the schedule which appeared earlier in this chapter, the breakdown of responsibility should be clear. However, a brief recapitulation might be in order:

Mr. Irvin ..... Units 1 and 2.

Mr. Dow ..... Units 3 and 4.

Mr. Blanding ..... Unit 5.

Mr. Hill ..... Units 6 and 7.

Each of these instructors talked about listening for the first ten minutes of each week's lecture hour and conducted a ten-minute check-out period during the final ten minutes of the same hour.

The intervening twenty-five minute period of each lecture hour was given over to one of the regular staff lecturers to speak on one of the regularly scheduled informational subjects in the lecture phase of the Written and Spoken English course. Such was the case with the four experimental sections.

For the four sections of control students the members of the listening committee did nothing since no listening instruction was given to them. The regular staff lecturers, however, continued to lecture to these groups. Instead of the twenty-five minute version of the lecture, they gave the full fifty-minute version. It is to be remembered that within any one week, both control and experimental groups received the informational lecture from the same lecturer.

The personality of the lecturer is a variable in the listening situation. The arrangement of this study however, made it possible to keep shifts of personalities to a minimum. Of course, in the actual testing, the control and experimental groups heard exactly the same voice from the same records.

The listening instruction personnel and the regular staff lecturers cooperated with each other as to timing and integration of subject matter.

THE VARIABLES AND THE CONTROL OF THEM

In a study such as this, there are many variables that might significantly affect any results upon which future programs might be built. Insufficient evidence is available to enable any institution doing research in listening to comfortably forget certain factors operative in the listening situation and concentrate upon others. Therefore, if a controlled study is to be made, all such variables must be taken into account. The major variables appear to be:

1. The personality of the lecturer.
2. Inconsistent attendance at training sessions.
3. Variations in the verbal intelligence of the students being studied.
4. Variations in the listening aptitude of the students being studied.
5. The interest of the student in the materials being presented.
6. The previous knowledge of the materials being presented.
7. The receptive mood of the students at the precise time of listening.
8. The intentional or unintentional motivation that might be provided by the test administrator.

These will be discussed respectively in order to show what was or was not done to control them. The reader must bear in mind, however, that in the zealous effort to control may lurk the danger of such a high degree of artificiality in the experiment that the results achieved have little or no application to practical pedagogy. Therefore, while effort has been made in this study to control varying factors, effort has also been made to maintain a normal classroom lecture situation. This conforms to the real purpose of this and similar studies; to provide a firmer basis for further progress in listening training.

In this study, three speaker personalities were involved: 1) the personality of each week's regular staff lecturer; 2) the personality of

the listening instructor; 3) the personality of the "voice" on the recorded materials over which the tests were given. As has been stated, the regular staff lecturers, within any one week, lectured to both the experimental and control groups. Such a system controlled this aspect of personality variation. However, the experimental group had the varying motivation of four different listening instructors. A more adequate system might have been to permit one listening instructor to give the entire seven-unit series. Yet, even though this aspect of personality difference was not controlled, the materials in the actual testing procedure, for both the experimental and the control groups, were delivered by the same voice. The recording eliminated to an extent the full force of the speaker-present personality; but it cannot be said that a recording does not possess some personality. Studies have shown that it does. Thus, as far as speaker personality is concerned, the materials actually tested were delivered by one speaker, through records; the informational lectures were given by the same lecturer; and the listening instruction was given by four different staff members. The controls existed in the testing and the practice, but not in the instruction.

Inconsistent attendance at training sessions was controlled by throwing out test results of those students who indicated that they did not attend all such sessions. The reader will recall that the test administrator gave instructions prior to the post-test that would enable the committee to delete those answer sheets which indicated incomplete attendance. This, of course, affected only the experimental group.

After such deletions were made, the original number of approximately 1200 students dropped to 1003.

Variation in verbal intelligence among the students was first analyzed by running a correlation between the listening pre-test results and the students' achievement on the linguistic section of the American Council on Education test series. Later this factor was minimized by application of the analysis of covariance.

The possibility that the listening aptitude of the students would vary to the point where matching would be necessary was a variable that had to be controlled. It was originally planned to adjust such differences through application of the covariance technique. However, the scores on the listening pre-test, which would have served as the diagnostic guide to such differences, revealed that the experimental and control groups were so evenly matched that further control of this variable seemed unnecessary. These pre-test scores were as follows:

Pre-test Scores
(perfect score 24)

Group	Number of students	Mean
Experimental	500	17.078
Control	500	17.457

The difference, 0.379, favoring the control group appears to be of such negligible significance that a safe assumption would be that the two groups were as well matched as could be hoped for as far as listening aptitude was concerned.

The distribution curves of both groups were equally similar. Figure 1 on the next page graphically shows the similar trends of the distribution of scores on the pre-test.

The fifth variable is the interest of the student listeners, at the time of listening, in the materials being presented. Obviously, such interest can neither be measured nor controlled; at least, it cannot be effectively controlled. Students have, in some studies, been given questionnaires and grouped according to their own subjective judgments as to their interest in subjects. Such a method cannot be trusted. In other studies, materials of a "nonsense" nature have been used in order to eliminate the interest factor. Such investigations neither conform to the so-called normal listening situation nor do they throw any significant light upon the measurement of comprehension.

The interest of the listener in the materials being presented is an important factor. Nichols rates it high; the British Broadcasting Company,[1] in its studies of educational broadcasts, also rates interest as perhaps the most important factor in comprehension. However, until some acceptable method of measuring and controlling interest is found, studies such as this one must recognize its existence, but admit frankly to an inability to control it.

Previous knowledge of the materials presented is similar to interest as a variable. It is difficult to ascertain the extent of such knowledge and the methods of ascertaining it are not dependable. In this study,

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1. Joseph Trenaman, Understanding Broadcasts on Science, unpublished study, British Broadcasting Company, September 5, 1950.

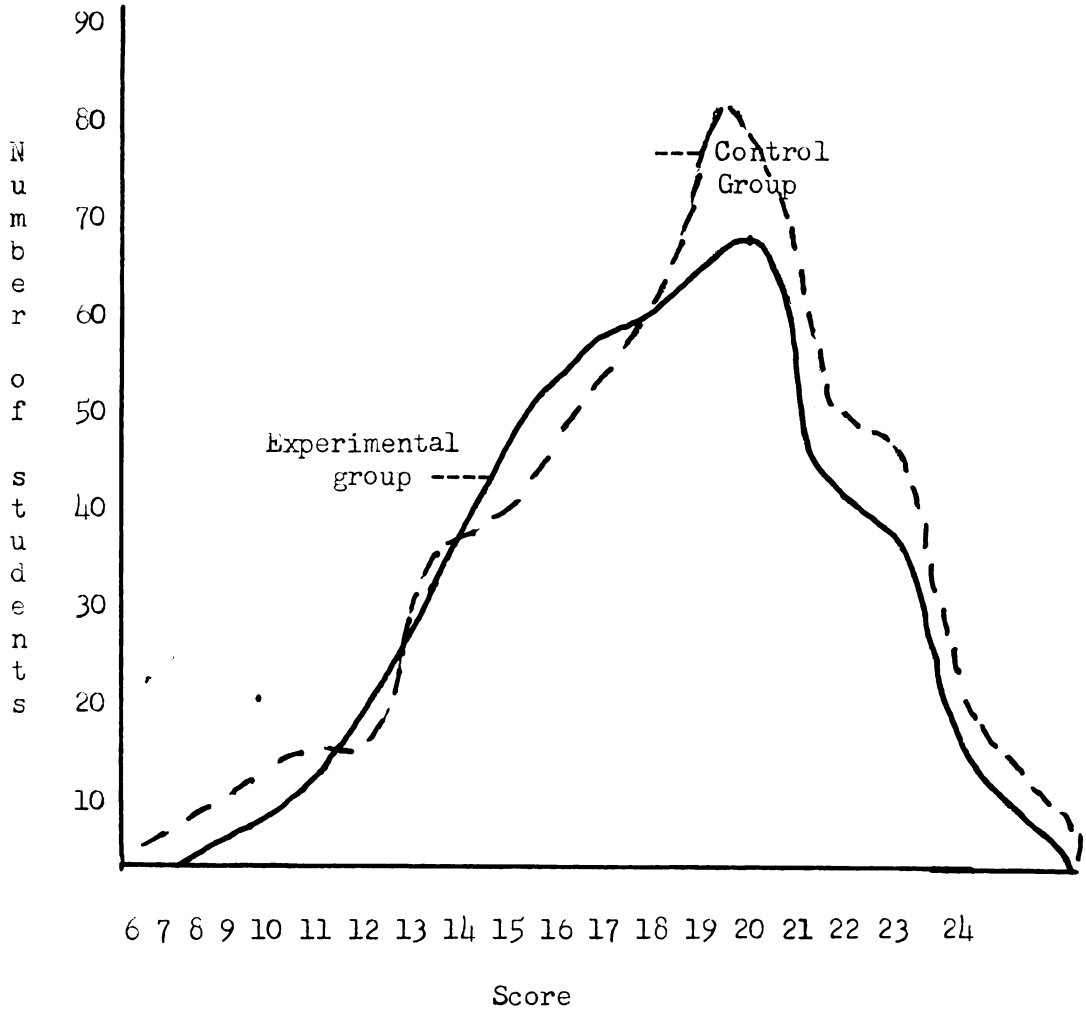

Figure 1. Distribution of Pre-test Scores. Five Hundred Students in Each Group.

the choice of subjects for testing, as was explained under testing procedure, was made in the attempt to control this variable. It seemed highly unlikely that incoming freshmen would vary much in their previous knowledge in the areas of Biology and Sociology. Thus, these two areas were used in the pre-test. It also seemed likely that such students would be fairly matched, after one term, in the areas of Literature and Economics since few, if any, would have had courses in these fields during their first term. These two areas were used in the post-test. Consequently, control of this variable was made through the choice of materials. The assumption about these materials on the pre-test seemed to be valid inasmuch as the scores and distributions of the scores among the two groups compare favorably.

Variable number seven, the receptive mood of the listener at the time of listening, is again similar to the two which have just been discussed. The presence of fatigue, emotional imbalance, challenge of the subject or lack of it, worry, and all of the other human behavior tendencies that tend to make concentration difficult are factors in the listening process. This study recognizes them as important. However, the only attempts to control this "receptiveness" were these:

1. An earnest attempt not to offer rewards in the form of grades, etc. to the listener which might be considered an extra motivating factor favorable to receptiveness.
2. An explanation within the listening training itself

of the power of worry, emotional upset, etc. as a deterrent to effective listening.

At this point in listening research, it must be conceded that receptiveness at the time of listening is a variable that must be considered uncontrollable. Some studies have sought to overcome it by extra motivation devices. However, such devices have tended to destroy the normalcy of the listening activity.

The same might be said of the last variable to be discussed, the intentional or unintentional motivation provided by the test administrator. It would be easy for such an administrator to slip into his instructions some words of encouragement or offerings of grade rewards and the like. Such motivation would tend to destroy the validity of any results achieved. This was controlled in this study by constructing a very brief, step by step, set of instructions and having the same administrator give these same instructions each time. The script for these instructions was given earlier in this chapter.

In summary of this section on control of variables, three variables in the listening process seem to defy control:

1. Personality of the lecturer.
2. The interest of the listener in the materials.
3. The receptive mood of the listener at the time of listening.

While some control was exercised over the personality of the lecturer, it is frankly admitted that the other two must be considered as operative in this study in whatever extent they exist.

THE SELECTION OF THE TEST POPULATION FOR STATISTICAL ANALYSIS

Since one of the variables in this study was inconsistent attendance at listening training sessions, the first step in the selection of a test population for statistical analysis was the deletion of all test answer sheets on the post-test which indicated that the student had missed one or more of the seven units of listening instruction. Such a step applied only to the experimental group. After this deletion, the actual number of students remaining in the experimental group was 1003.

Rather than use the entire group, the writer decided to use a group of 500. This number seemed large enough to make the sample more than adequate. In order to select this 500, the writer alphabetized the answer sheets for the post-test, and beginning with the first one, counted three, which would bring him to the first answer sheet of 1000, and then by random choice selected every other answer sheet. This selection resulted in the desired number of 500.

These 500 answer sheets of the experimental group's post-test scores were then matched with the pre-test sheets for the same students; these two answer sheets were clipped together. A typed list, by lecture sections A, B, E, F, was then made with the scores of each of the 500 students opposite his name.

Approximately 1230 student answer sheets were available for the control group. No deletion for missed units needed to be made, since the group had received no listening instruction. The same process of selection was followed. Beginning with the first one, the writer counted

three, which brought him to the first of 1227. He then selected by random choice every other one until 227 answer sheets were isolated. These were deleted, leaving 1000, the same number as existed in the experimental group when the random sampling of that group was made. At this point, further selection was made, as was done in the experimental group, by taking every other sheet until 500 was reached. This 500 became the sample of the control group.

Again reference can be made to the similarity of pre-test scores and the similarity of score distribution as a defense of this method of selection.

Lists were made by lecture section of the control group and names and scores were typed into these lists. The lists for both the experimental and control groups will be found in APPENDIX C.

These 1000 students, 500 experimental and 500 control, make up the test sample, analysis of which will follow in the remainder of this study.

CHAPTER V

CHAPTER V

ANALYSIS OF RESULTS

Earlier in the discussion of this experiment, it was pointed out that the results of the listening training and testing would be probed to discover three things:

1. If there is a difference between the listening test results of the group receiving training and the group not receiving it.
2. If there is a difference in test results between the sexes.
3. If there is a difference in test results between the times that groups convene for listening.

Before getting into such an analysis, however, it is necessary to remind the reader of several qualifying circumstances.

Because so many variables operate in the listening activity, every attempt was made to eliminate all possible elements that might influence results. One of these is the test itself. The same test, given more than once, can influence results because students become acquainted with it. To eliminate this re-test factor as a variable, a different listening test was administered at the end of the term, after training, than was given at the beginning of the term, prior to training. This eliminates any possibility of comparing either the experimental or the control group

with itself. However, in the extreme high and extreme low scoring brackets some kinds of comparisons were possible and were made.

It was also pointed out that certain variables operative in the listening activity could not be controlled at all. These were the interest and mood of the listener, and the personality of the speaker. Two other variables, listening aptitude and verbal intelligence, have been minimized to great extent by other means. However, all of these variables may be minimized by the application of the analysis of covariance. This is easier to see by the following small chart:

Variables	
Controlled by Analysis of Variance	Controlled by Analysis of Covariance
Sex	Listening aptitude
Time	
Interaction of these	

Any or all of the variables not specifically controlled might be operative to make differences in listening aptitude. Therefore, the adjustment made in the post-test results to account for differences that appeared in pretest results, by the analysis of covariance, would minimize such variables.

In addition to this, with respect to verbal intelligence, a coefficient of correlation was computed between the test results on the pretest and the scores made by the same students on the American Council of Education Linguistic test.

Using the Pearson Product-Moment[1] formula, the following results were obtained:

	Correlation of Pretest with ACE Linguistic test
Experimental group	0.1102
Control group	0.1103

The magnitude of both coefficients is not sufficiently high to be compelling evidence that a non-chance relationship exists between the listening scores and the ACE (L) scores. However, these coefficients do have a significance level of between 5 and 10 per cent which suggests a possible positive relationship. Our best estimate of this possible relationship is the low correlation of .11. It did not seem that the linguistic factor, other than as it is reflected in the pretest score, should be included as an additional control variable in the study. However, recognizing the possibility that the ACE (L) test might not be a good measure of verbal intelligence as it applies to listening, this variable was not ruled out with the revelation of the insignificant correlation. It was still under consideration as a possible factor influencing test results when the covariance technique was applied.

Variation of listening aptitude was also discussed as a variable operative in the listening situation which might very well be responsible for differences in end results. Despite the similarity of the

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1. $$r = \frac{N \sum XY - (\sum X)(\sum Y)}{N \sum X^2 - (\sum X)^2 \cdot N \sum Y^2 - (\sum Y)^2}$$

N number of students
X sum of Pre-test scores
Y sum of ACL scores

results between the experimental and control groups on the pretest, as fully described in Chapter IV, this variable was likewise under consideration at the time of analysis of post-test results. The covariance adjustment of the post-test scores was made with this variable, as well as others, in mind.

Therefore, with this brief recapitulation of certain qualifying circumstances, the following analysis may be easier to comprehend.

In Tables III, IV, V and VI, the arithmetic mean scores are given for all sections of both the experimental and control groups and the combined arithmetic mean scores of the groupings about which we are most concerned:

Experimental	vs Control
Male	vs Female
Morning	vs Afternoon

In Figures 2 and 3, the distribution of scores for both the experimental and control groups is given for both the pretest and the post-test.

However, before beginning any interpretation of these score results, it is apparent that some explanation should be made of the results shown in Table V. In every instance except the male-experimental, and morning experimental group, the post-test scores are lower than the pretest scores. This might appear unusual to the casual observer, particularly in the case of the experimental group since they had received seven units of instruction in the interval between the two tests.

Table V is not as confusing as it might appear. It must be remembered that the same test was not administered as a post-test as was given as a

pretest. Therefore, the scores in any group can not be compared, one test with the other. Our only concern, therefore, is with the post-test scores and with the fact that, as the post-test was being administered, one group taking it, the experimental, had had listening instruction, and the other group, the control, had had no instruction. The post-test scores, as they are shown, do not represent a "loss" in listening ability since they can not be compared with the scores on the pretest. Had the tests been the same, the results might prove embarrassing.

Turning our attention to Table VI, we find here the scores that may be meaningful in this study. On the post-test, the experimental group had a mean score on the 24-question test of 16.948 which was 1.190 better than the mean score of the control group. This figure of 1.190 has very little meaning unless it can be transposed into something meaningful. It represents 7.1 per cent of the combined means of both groups. In the light of this per cent interpretation it might be said that the experimental group, because of the apparent positive gain represented by the difference in means of 1.190, did 7.1 per cent better on the post-test than did the control group. However, this would only be true if some factors other than listening training were not present. Therefore, further analysis of these apparent gains must be made. In the final analysis, we are only concerned anyway with whether or not any gain, no matter what per cent it might turn out to be, is significant or not.

It is interesting to note that in the post-test results the males had higher means scores than the females in both groups. According to

TABLE III

MEANS OF THE EXPERIMENTAL GROUP
BY LECTURE SECTION

	Morning			
	Lecture A		Lecture E	
	Male	Female	Male	Female
Pre-test	17.027	17.611	16.969	17.333
Post-test	17.608	17.361	17.585	16.637
	Afternoon			
	Lecture B		Lecture F	
Pre-test	17.183	16.370	17.485	16.641
Post-test	17.383	16.000	16.885	15.923

TABLE IV

MEANS OF THE CONTROL GROUP
BY LECTURE SECTION

	Morning			
	Lecture G		Lecture J	
	Male	Female	Male	Female
Pre-test	17.669	17.583	17.972	17.630
Post-test	16.515	15.000	16.903	16.087
	Afternoon			
	Lecture D		Lecture K	
Pre-test	17.734	16.714	17.362	16.800
Post-test	16.493	14.661	15.345	15.067

TABLE V

MEAN SCORES FOR BOTH EXPERIMENTAL AND CONTROL GROUPS

	Pretest	Post-test
	Experimental	
Male	17.166	17.415
Female	16.969	16.481
Morning	17.235	17.348
Afternoon	16.920	16.548
Total Experimental	17.078	16.948
	Control	
Male	17.734	16.314
Female	17.181	15.203
Morning	17.763	16.126
Afternoon	17.152	15.391
Total Control	17.457	15.758

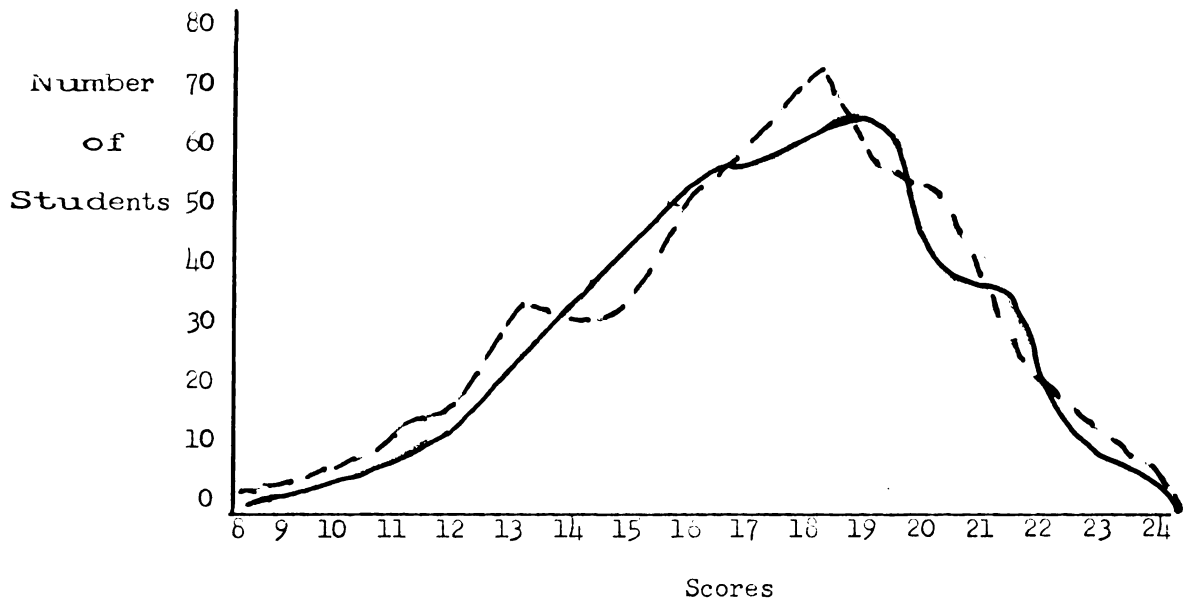

Figure 2. Distribution of Listening Test Scores Among the Experimental Group.

Number of Students	500
Pretest Mean Score	17.078
Post-test Mean Score	16.948

_____ Pretest

------ Post-test

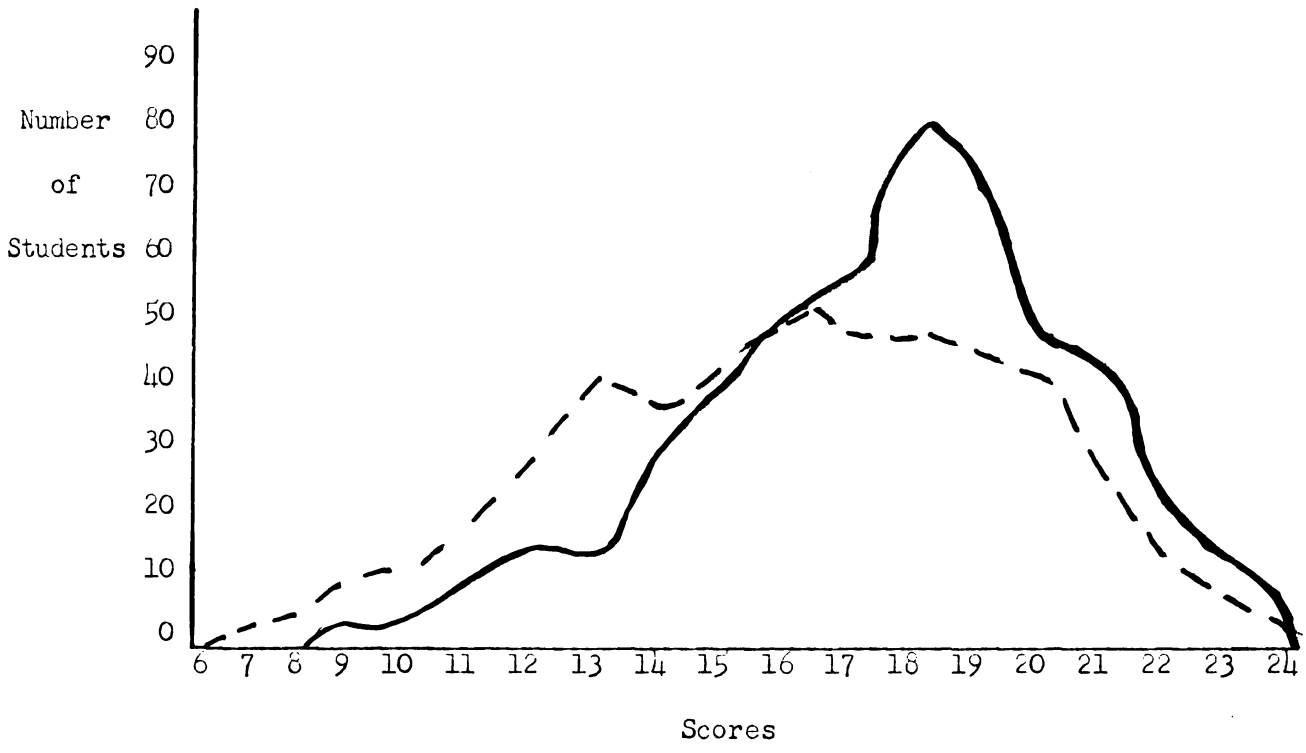

Figure 3. Distribution of Listening Test Scores Among the Control Group.

Number of Students	500
Pretest Mean Score	17.457
Post-test Mean Score	15.758

_____ Pretest

------ Post-test

TABLE VI

DIFFERENCES BETWEEN MEAN SCORES ON POST-TEST

	Experimental	Control	Experimental Gain or Loss
Male	17.415	16.314	+ 1.101
Female	16.481	15.203	+ 1.278
Morning	17.348	16.126	+ 1.222
Afternoon	16.548	15.391	+ 1.157
Totals	16.948	15.758	+ 1.190

Table VI, the experimental males had a mean score difference of plus 0.934 and the control males had a plus difference of 1.111. Combining both groups, the males had higher mean scores of 1.022. Again, these figures have no meaning other than possible significance, which will have to be analyzed.

The morning groups received higher mean scores than the afternoon groups; plus 0.600 in the experimental, and plus 0.735 in the control. Significance will also have to be tested here.

At this point, then, we are concerned about two things:

1. Are these differences in means due to listening training?
2. Are these differences significant?

Following a statistically acceptable method of applying an analysis of covariance, according to Snedecor,[1] the following results were obtained:

The scores were arranged according to the following pattern:

	Group	Sex	Time	Pre-test	Post-test
Experimental					
Control					

In order to eliminate supererogative and troublesome design, the following procedure was used: the smallest number of students in any one of the above categories was determined and used as the group experimental unit. This number occurred in the female afternoon control group and turned out to be 63. It then became necessary, by random choice, to reduce the number of students in all other groups to 63. The distribution is as follows:

		Experimental	Control
Male	Morning	63	63
	Afternoon	63	63
Female	Morning	63	63
	Afternoon	63	63

Total number of students -- 504

1. George W. Snedecor, "Two Variates in Two or More Groups", Chapter 12, pp. 318-327. In Statistical Methods, Iowa State College Press, Ames, 1946.

The summary values for each group are shown in Table VII. The values opposite (S) are the sums of raw scores on the initial and final listening tests; (S^2) represents the sum of squares of those raw scores; and (SS) represents the sum of the products.

TABLE VII

DATA ON 504 STUDENTS INVOLVED IN A STUDY TO DETERMINE THE EDUCABILITY FOR EFFECTIVE LISTENING

Group	Sex	Time		Initial Test		Final Test
Experimental	Male	A.M.	S	1019		1175
			S^2	17075		22203
			SS		19270	
		P.M.	S	1067		1146
			S^2	18545		21254
			SS		19721	
	Female	A.M.	S	1073		1094
			S^2	18735		19566
			SS		18864	
		P.M.	S	1022		1017
			S^2	16988		17019
			SS		16727	
Control	Male	A.M.	S	1134		1036
			S^2	20938		19672
			SS		18949	
		P.M.	S	1094		961
			S^2	19536		16577
			SS		17143	
	Female	A.M.	S	1073		889
			S^2	18793		12941
			SS		15399	
		P.M.	S	1049		912
			S^2	17913		14042
			SS		15585	

The first question about these figures that is easiest to answer is, "Are differences in the average performance between the students, classified by instructional units, sex, or time of day, sufficiently large to suggest a real and not a chance difference?" By a straightforward analysis of variance[1] we find that some are and some are not.

TABLE VIII

ANALYSIS OF VARIANCE OF FINAL LISTENING TEST SCORES

Variation	df*	SS*	MS*	Significance
Groups	1	797.5317	797.5317	Sign. at 1% level
Sex	1	327.0555	327.0555	Sign. at 1% level
Time	1	49.5317	49.5315	Not significant
G x S	1	0.3889		Not significant
G x T	1	5.7856		Not significant
S x T	1	4.9004		Not significant
G x S x T	1	42.2930	42.2936	Not significant
Within	496	7655.7770	15.4350	
Total	503	8863.3254		

* df = degrees of freedom; SS = sum of squares; MS = mean square.

It appears that differences in means between the experimental group as a whole and the control group as a whole are significant at the one per cent level, favoring the experimental group. This means that a difference as large as that found will occur by random fluctuation less than one time in a hundred. Because of the rarity of chance operating to produce a difference as large as this, it may be assumed that a

1. Snedecor, op. cit., p. 316-324.

non-chance factor is operating. The same is true about the difference between the male and the female students. This difference is also significant at the one per cent level.

The difference in mean performance that existed between the afternoon and morning groups, however, turned out to be not significant. A non-significant interaction, such as shown for GxS, GxT, SxT, GxSxT, indicates little evidence of any relationship between listening ability and the joint effects of the factors of these particular interactions. This evidence can be found in Table VIII opposite the indicators GxS, GxT, SxT and GxSxT.

Having thus established significance in the differences between the means, experimental vs control and male vs female, it then becomes necessary to determine whether or not this significance is due to the variable being measured, listening training, or to some other variable that might have been operating to influence these results. As has been indicated, verbal intelligence, even though a low correlation was found (0.11), might possibly be at work in these results. Therefore, a test of significance among adjusted group means, or covariance, was run. Table IX indicates the results of this statistical analysis. Table IX will be found on the next page.

According to the results found in Table IX, the regression adjustment made in this analysis shows that group and sex differences in performance on the post-test remain highly significant. Evidently, the differences in listening ability existing between sexes and between the experimental and control groups prior to the initiation of listening

TABLE IX

ANALYSIS OF COVARIANCE OF ADJUSTED MEANS[1]

Variation	df	Sums of Squares and Products			Errors of Estimates			
		Sy^2	Sxy	Sx^2	SS	df	MS	Significance
Total	503	8883.3254	2352.1866	4122.2838				
Groups	1	797.5317	-212.5912	56.6687				
Sex	1	327.0555	78.1389	18.6687				
Time	1	49.5317	21.0040	8.9068				
G x S	1	0.3889	-3.1945	26.2400				
G x T	1	5.7858	-6.5358	7.3829				
S x T	1	4.9604	-8.2341	13.6686				
G x S x T	1	42.2936	33.3135	26.2401				
Within	496	7655.7778	2450.2858	3984.5080	6141.3653	495	12.4068	
GST Error	497	7698.0714	2483.5993	3990.7481	6152.4299	496		
Adj. GST	1-				11.0646	496		Not Significant
Time Error	497	7705.3095	2471.2898	3972.4166	6167.8894	496		
Adj. Time	1				26.5241	1	26.5241	Not Significant
Sex Error	497	7982.8333	2528.4247	3983.1767	6377.8502	496		
Adj. Sex	1				236.4849	1	236.4849	Sign. at 1% level
Groups Error	497	8453.3095	2237.6946	4021.6687	7208.2350	496		
Adj. G.					1066.8697	1	1066.8697	Sign. at 1% level

1. Snedecor, op. cit., p. 320.

instruction do not account for the final differences. That is, final differences in listening ability do not reflect pre-existing differences. This does not prove that the listening instruction brought about differing skills in listening but, in view of the control on three variables, time, sex, and listening aptitude, it does suggest that the listening instruction was effective.

As a further test of the validity of this analysis, the adjusted mean scores were calculated and compared with the unadjusted mean scores. The major shifts occurred in the two categories in which significance has already been revealed, experimental vs control and male vs female. Table X is devoted to this calculation.

TABLE X

CALCULATION OF ADJUSTED FINAL LISTENING TEST SCORES

		Mean Initial Test Score X	Dev. from Mean x	Product bx	Mean Final Test Score Y	Adj. Final Score Y-bx
Group	Experimental	16.5913	-.3353	-.2072	17.5873	17.3801
	Control	17.2619	.3353	.2072	15.0714	15.2786
Sex	Male	17.1192	.1926	.1190	17.1351	17.2541
	Female	16.7343	-.1923	.1189	15.5240	15.4051
Time	A.M.	17.0597	.1331	.0823	16.6431	16.7254
	P.M.	16.7938	-.1328	-.0821	16.0161	15.9340

In this particular analysis, it was desirable to know whether or not it had been worthwhile to run an analysis of covariance. Three items of

information would assist in making this judgment:[1]

1. the list of actual and adjusted means
2. a comparison of the sums of squares of errors of estimate
3. the change in the precision of the experiment owing to adjustment of the error sum of squares.

Table XI shows the analysis of error in the study.

TABLE XI

ANALYSIS OF ERROR VARIANCE IN LISTENING STUDY

Variation		df	SS	MS	Significance
Within, unadjusted	Sy^2	496	7655.7778	15.4350	
Reduction due to reg.	$\frac{(Sxy)^2}{Sx^2}$	1	1514.4125	1514.4125	Sign.at 1% level
Error for adjusted scores		495	6141.3653	12.4068	

The changes taking place in this experiment are clearly indicated in the table above. The sum of squares, Sy^2 = 7655.7778, with 496 degrees of freedom,[2] is analyzed into two parts, one with a single degree of freedom measuring the variation attributable to linear regression,[3] the other with 495 degrees of freedom assigned to error. Not only is the mean square for error reduced from 15.4350 to 12.4068 but the reduction

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1. Snedecor, op. cit., p. 323.

2. Degrees of freedom equals N-7.

3. Regression ... a tendency toward uni-modality of frequency occurring among many psychological characteristics.

in sum of squares due to regression is significant. This reveals a valuable increase in the precision of covariance over variance.

In all it has been shown that it was worth-while to conduct this analysis of covariance, which indicates that the differences in means between experimental and control groups and between male and female groups are not only significant but that, with some reason, differences can be attributed to the listening training received.

The values of a study such as this one can often be found by probing around among its various sub-areas as well as looking at the over-all results. The writer thought it wise to divide the groups into scoring brackets and investigate any changes that might have taken place as a result of training in listening. The scores appeared to lend themselves to a very natural breakdown at three points: from 15 down, from 16 through 17, and from 18 to 24. While the number of students in each scoring category do not add up to a quartile division, or any of the other statistically acceptable subdivisions, there is justification for making this three-way breakdown. Because the score of 15 falls below the mean score for both groups on both the pretest and post-test, the students in this category might be called poor or ineffective listeners. Those in the category of 16 through 17 might be called the "average" listeners, since the means for both groups on both tests fall in this scoring bracket. On these tests, the scoring brackets of 18 to 24, falling above the means, might indicate good or effective listeners. If one prefers, the terminology could be altered to read below-average, average, and above-average listeners.

In the following table, the distribution of students within these three categories is given:

TABLE XII

SUMMARIES OF PERCENTAGES IN VARIOUS SCORING BRACKETS

Score Brackets	Experimental		Control	
	Pre-test	Post-test	Pre-test	Post-test
15-6	29.6%	14.6%	22.4%	19.8%
16-17	25.4%	55.2%	22.4%	52.0%
18-24	45.0%	30.2%	55.2%	28.2%

It is obvious from these percentages that some significant shifts took place in the post-test. In the ineffective or below-average category, scores of 15 or below, 29.6 per cent of the experimental group found themselves there on the pre-test. But, on the post-test only 14.6 per cent of the experimental group were still in this category. The difference between the percentages reveals that over half of this group lifted themselves out of this low category and distributed themselves among higher scoring brackets. In terms of numbers of students, rather than per cent, there were 146 experimental students in this 15-or-below category on the pre-test, and only 73 experimental students in the category on the post-test. Again, over half, or to be exact, 50.9 per cent, of these students lifted themselves above this category after training.

Among the control group, the results were not as good. While 22.4 per cent of the control students were in this low category on the pre-test,

19.8 per cent were still there on the post-test. Of the 112 control students who were in this category on the pre-test, 99 were still there on the post-test. Therefore, only 13 students, or 11.6 per cent moved up.

Figures 4 and 5 show the relative distributions of both groups of students on both tests. It is obvious from this analysis of this scoring bracket, thus far, that many more of the experimental students lifted themselves out of the below-average category on the post-test than did the control students. Seventy-five experimental students lifted themselves out as compared to but 13 control students; interpreted in terms of per cent, 50.9 per cent of the experimental students lifted themselves out of this below-average category as compared to but 11.6 per cent of the control students. This is a broad spread of difference favoring the group who received listening instruction.

This spread on the post-test is even more interesting when it is realized that there were 36 more students of the experimental group in this low category on the pre-test. With this 36-student handicap, so to speak, the experimental group finished the post-test with 26 fewer students in this category than the control group.

Other aspects of this particular part of the study are also interesting. Tables XIII and XIV are devoted to these other considerations.

In Table XIII, the same consistent pattern of advantage in favor of the experimental and the male groups that existed in the over-all analysis is present. It is even more marked in the case of the experimental group. The difference in the mean scores on the post-test is in favor of the experimental by nearly three points, plus 2.648. The average gain of the

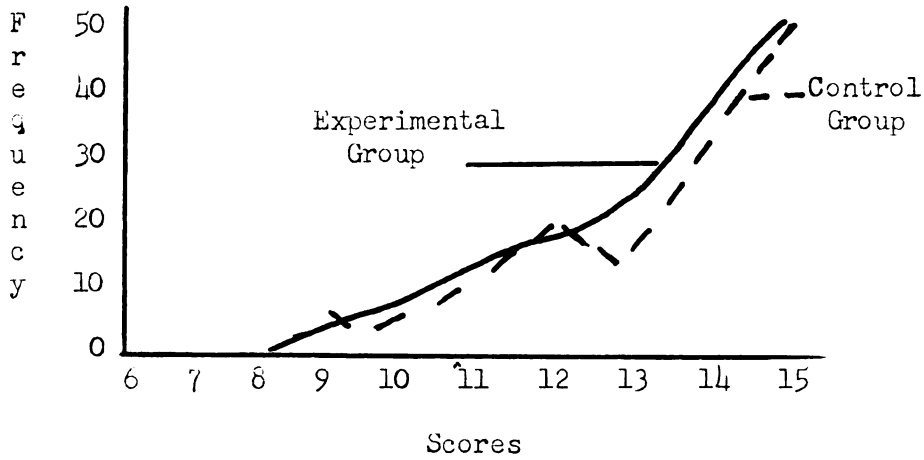

Figure 4. Experimental vs Control Groups on Pretest in Scoring Bracket 6-15.

Number of students, experimental	148
Number of students, control	112
Per cent of total 500 experimental	29.6%
Per cent of total 500 control	22.4%

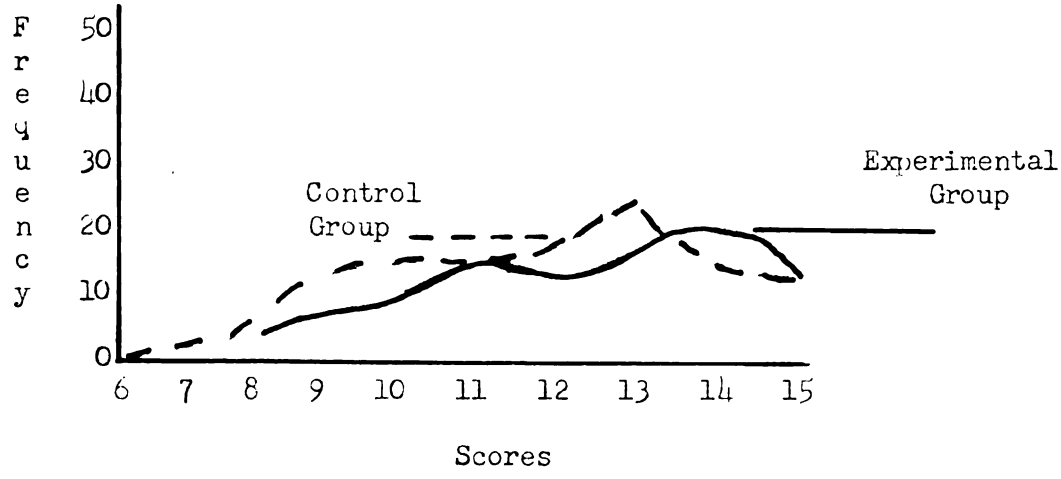

Figure 5. Experimental vs Control Groups on Post-test in Scoring Bracket 6-15.

Number of students, experimental	73
Number of students, control	99
Per cent of total 500 experimental	14.6%
Per cent of total 500 control	19.8%

TABLE XIII

SUMMARY STATISTICS OF CONTROL AND EXPERIMENTAL GROUPS IN THE 15 TO 6 SCORING BRACKET

	Experimental		Control	
	Pre-test	Post-test	Pre-test	Post-test
Mean score	13.573	15.240	13.604	12.392
Mean difference on Pre-test			∕ 0.031	
Mean difference on Post-test		∕ 2.848		
Means				
Male morning	13.329	15.958	13.456	12.552
Male afternoon	13.665	15.256	13.745	12.283
Total male	13.497	15.607	13.600	12.417
Female morning	13.555	15.355	13.458	12.406
Female afternoon	13.744	14.394	13.758	12.333
Total female	13.649	14.874	13.608	12.369
Above 15 on post-test		50.9%		11.6%
average gain		3 points		1.73 points
Below 15 on post-test		40.4%		79.4%
average loss		2.5 points		3.5 points
Per cent of total of 500 students	29.6%	14.6%	22.4%	19.8%

TABLE XIV

POST-TEST DISTRIBUTION OF PRE-TEST SCORES 15 AND BELOW

Pre-test scores		Post-test scores: 24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
		represents gain												represents loss						
15	Experimental	0	0	1	1	1	9	7	5	6	2	6	3	1	4	1	1	0	0	0
	Control	0	0	0	0	1	0	4	3	4	9	8	4	2	4	2	1	0	0	0
14	Experimental	0	0	0	1	1	4	5	5	3	6	2	5	3	2	2	0	0	0	0
	Control	0	0	0	1	0	0	0	0	0	2	5	10	7	2	2	3	0	1	0
13	Experimental	0	0	0	0	1	0	3	5	5	3	4	3	2	1	0	2	1	0	0
	Control																			
12	Experimental	0	0	1	0	1	1	1	2	2	1	0	3	2	1	1	0	0	0	0
	Control	0	0	0	0	0	0	0	0	0	0	0	1	3	2	3	1	1	3	0
11	Experimental	0	0	1	0	0	0	0	0	1	0	4	1	1	1	0	0	1	0	0
	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	1
10	Experimental	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0
	Control	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
9	Experimental	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0
8	Experimental	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Experimental -- pre-test mean 13.573; post-test mean 15.240
Control -- pre-test mean 13.604; post-test mean 12.392

experimental group in score points is nearly twice that of the control group. The loss, on the post-test, which was suffered by those in the experimental group who failed to do better after training, was one full point less than the loss suffered by the control group.

In Table XIV, the distribution of post-test scores again highly favors the experimental group. One more set of figures may make this clearer to the reader. Table XV analyzes the percentages of loss and gain of both groups in this category of 15 and below.

Table XV shows once again a decided advantage on the post-test of the "trained" group, as far as this below-average category is concerned. The amount of gain in the test results was greater and the amount of loss was far less.

It appears, therefore, that, as far as these test results show, this below-average group enjoyed a substantial residue of gain which may, with reason, be attributed to training in listening. The gain not only permitted a great number of students originally in this category to move out of this bracket and up the scoring scale, but the gains that were made were substantially higher than those registered by the control group.

Logically the above-average group should now be analyzed. According to Table XII, the percentages of both groups in this bracket were as follows:

Score Bracket	Experimental		Control	
	Pre-test	Post-test	Pre-test	Post-test
16-24	45%	30.2%	55.2%	28.2%

TABLE XV

AMOUNT OF GAIN AND LOSS ON POST-TEST OF STUDENTS IN THE 15 AND BELOW CATEGORY

Pre-test Score	Number of Scores	Percentage on Post-test Gaining	Losing
		Experimental	
15	48	65%	31%
14	39	49	36
13	29	48	42
12	16	50	44
11	10	20	80
10	3	67	0
9	2	0	100
8	1	0	100
	148		
		Control	
15	42	30%	49%
14	33	2	77
13	11	0	100
12	14	0	100
11	6	0	100
10	2	0	100
9	3	0	100
8	1	0	100
	112		

It is obvious that neither group maintained itself in this above-average category on the post-test. Of the 225 experimental students who were in this bracket on the pre-test, only 151 remained in this bracket on the post-test. This is a loss of 74 students or 32.8 per cent. Of the 276 control students who were in this category on the pre-test, only 141 remained on the post-test; a loss of 135 students or 49.2 per cent. While there is a spread of difference between the experimental and the control which favors the experimental, the fact that neither group held its own in the post-test results nullifies any possible advantage which might be attributed to listening training.

Figures 6 and 7 will show the relative distribution of both groups on both tests.

From Figures 6 and 7 it can be seen that while the experimental group had 51 fewer students in this high bracket on the pre-test, it had 10 more students than the control group in this bracket on the post-test. Again, despite the fact that both groups suffered losses in this high bracket, the experimental group's loss was not as great as that of the control group.

A summary table for this bracket, similar to Table XIII for the below-average bracket, can be found on page 96.

As in the over-all results, there can be found in this bracket a consistent pattern. The experimental group seems to have higher scores than the control on the post-test and the male group seems to have higher scores than the female. Again it needs to be emphasized, however, that

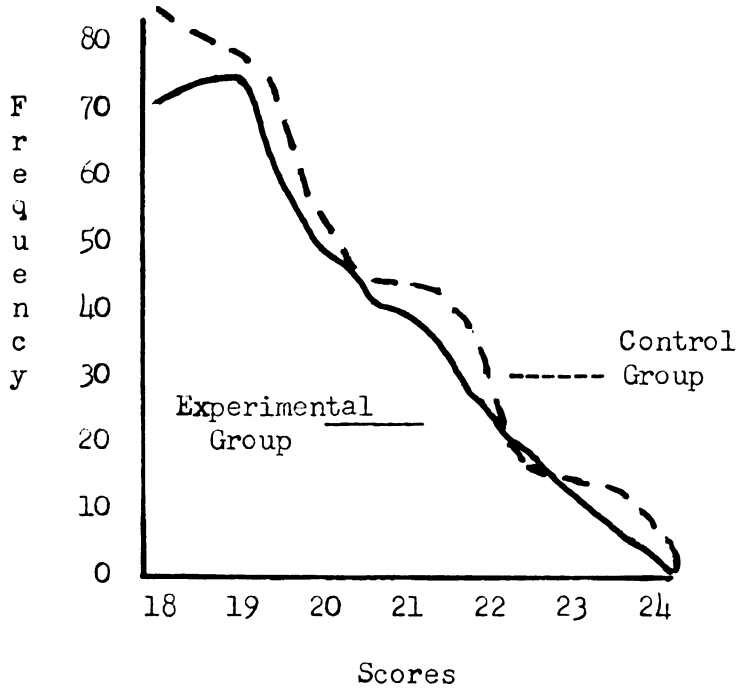

Figure 6. Experimental vs Control Groups on Pretest in Scoring Bracket 18-24.

Number of students, experimental	225
Number of students, control	276
Per cent of total 500 experimental	45.0%
Per cent of total 500 control	55.2%

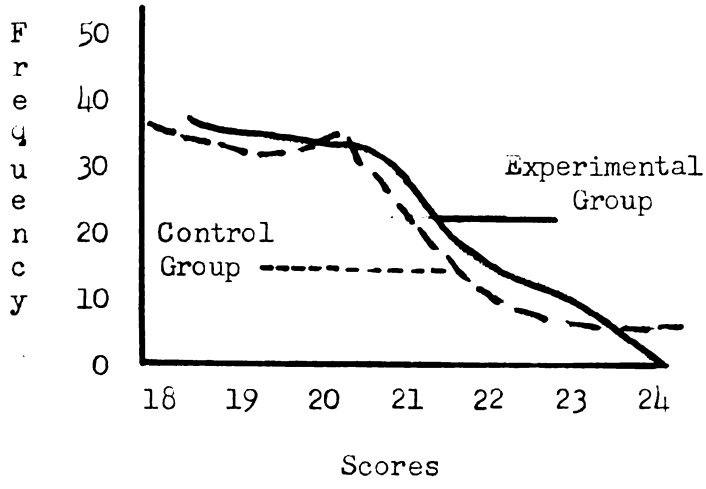

Figure 7. Experimental vs Control Groups on Post-test in Scoring Bracket 18-24.

Number of students, experimental	151
Number of students, control	141
Per cent of total 500 experimental	30.2%
Per cent of total 500 control	28.2%

TABLE XVI

SUMMARY STATISTICS OF CONTROL AND EXPERIMENTAL GROUPS
IN THE 18 TO 24 SCORING BRACKET

	Experimental		Control	
	Pre-test	Post-test	Pre-test	Post-test
Mean score	19.566	17.760	19.502	17.234
Mean difference Pre-test	≠ 0.064			
Mean difference Post-test		≠ 0.526		
Means				
Male morning	19.667	18.547	19.799	17.892
Male afternoon	19.537	18.091	19.479	17.452
Total male	19.602	18.319	19.639	17.672
Female morning	19.873	17.657	19.550	16.843
Female afternoon	19.187	16.468	19.180	16.750
Total female	19.530	17.062	19.365	16.796
Above 18 on post-test (this group)	48.5%		38.4%	
Holding at 18	16.5%		12.6%	
Below 18 on post-test	35.0%		48.0%	
Average loss	2.6 points		3 points	
Per cent of total of 500 students	45.0%	30.2%	55.2%	28.2%

despite this positive difference in mean scores both groups lost ground in this bracket.

It might be interesting to see just how the students who were in this high bracket on the pre-test distributed themselves throughout all brackets on the post-test. Table XVII will show this.

Little else need be said about this above-average scoring bracket. The distribution as shown in Table XVII further emphasizes the observable fact that the experimental group scored higher on the post-test than did the control. It also further emphasizes the observable fact that both groups suffered losses in this category.

The third scoring breakdown that was made was in the 16 through 17 bracket:

	Experimental		Control	
Score	Pre-test	Post-test	Pre-test	Post-test
16-17	25.4%	55.2%	22.4%	52.0%

Because this scoring bracket encompasses most of the mean scores, it does not merit the detailed analysis given the two extreme brackets. On the post-test both groups in this bracket increased their proportions and in approximate amounts. The only real item of interest in this shift is in the make-up of this increase. In order to show this clearly, it becomes necessary to include a variation of Table XII. In order not to confuse the reader, this inclusion will be labeled Table XVIII (A Variation of Table XII).

The item of interest previously referred to in the discussion of the 16-17 score bracket is the figure included parenthetically. The

TABLE XVII

POST-TEST DISTRIBUTION OF PRE-TEST SCORES 18 AND ABOVE

Pre-test scores	Post-test scores	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
24	Experimental	0	0	0	0	1	0	1												
	Control	0	0	0	0	0	1													
23	Experimental	0	3	1	2	1	0	1												
	Control	0	0	2	3	3	1	2	0	1										
22	Experimental	0	1	3	2	2	2	3	0	0	1									
	Control	0	1	0	3	2	1	3	2	2	2	0	2							
21	Experimental	0	3	4	10	2	6	5	2	4	0	0	1							
	Control	0	0	2	2	11	7	7	7	3	1	1	2	0	0	0	0	1		
20	Experimental	1	1	0	5	7	5	6	8	4	2	1								
	Control	1	1	1	4	7	5	4	8	6	4	4								
19	Experimental	0	0	4	4	14	6	14	4	12	2	1	3	2						
	Control	1	2	3	4	7	8	9	9	9	7	3	3	3	2					
18	Experimental	0	0	2	2	5	13	9	9	6	4	6	6	1	2					
	Control	0	0	1	5	5	11	10	11	10	10	5	7	4	3	1	0	1		

Experimental -- pre-test mean 19.566; post-test mean 17.690
Control -- pre-test mean 19.502; post-test mean 17.234

TABLE XVIII

(A Variation of Table XII)

SUMMARIES OF PERCENTAGES IN VARIOUS SCORING BRACKETS

Score Brackets	Experimental		Control	
	Pretest	Post-test	Pretest	Post-test
6-15	29.6%	14.6% (-15.0)	22.4%	19.8% (-2.6)
16-17	25.4%	55.2% (+29.8)	22.4%	52.0% (+29.6)
18-24	45.0%	30.2% (-14.8)	55.2%	28.2% (-27.0)

figure 29.8 which represents the difference in percentages among the experimental group between the pretest and post-test in this bracket is made up of a pretty equal shift from the 6-15 bracket up and from the 18-24 bracket down. Among the control group, however, the equivalent figure of 29.6 is made up of but a 2.6 shift upward and a 27 differential down. But, taking the 16-17 category as a whole, the two groups are fairly evenly matched as far as performance on the listening tests is concerned.

In brief summary, this chapter has dealt with an analysis of the over-all results of this experiment which revealed that there were significant differences between the experimental and control groups and between the male and female groups. There were no significant differences between the times of day that students listened. This analysis also showed that these differences could, at the one per cent level, be attributed, with reason, to listening training. The experimental group which placed in

the extreme low scoring bracket on the pretest seems to have made appreciable improvement over the students in the control group who placed in this low scoring bracket on the pretest. While both groups in the high scoring bracket suffered losses, the losses were not as great among the experimental students as they were among the control students. The analysis of the median scoring bracket revealed very little of interest.

CHAPTER VI

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

At the end of Chapter I, the following statement was made:

> "The implication has been that an attempt will be made to teach listening and to evaluate the residue of that instruction."

The teaching has been described as well as the circumstances under which it took place; the results have been analyzed. It is time to evaluate the residue.

In order to attempt to teach listening, certain basic assumptions had to be made about such instruction. One of these assumptions was that, according to research, listening could be improved through training. Belief in this assumption partially motivated the conduct of the study.

In order to attempt to evaluate the residue, another assumption was made: that listening comprehension, manifested in test behavior, is measurable in quantitative terms provided a valid and consistent test is used. This assumption partially motivated the analysis of results. As an outgrowth of this study, the following conclusions and recommendations appear to be justified:

Conclusions

I. Some or all of the processes involved in listening can be positively influenced by teaching; at least a sufficient number of these processes can be so influenced as to result in

increased listening effectiveness as demonstrated by improvement in test behavior.

II. Listening instruction, as exemplified in this study, is worth-while and justifies the time and effort devoted to it. This conclusion is based upon the over-all results achieved in this study, which are:

A. There was sufficient difference between the mean performance of the "trained" group, or experimental, and the "untrained" or control group that such difference could be termed highly significant.

B. This difference, favoring the experimental group, could reasonably be attributed to listening training.

III. Listening training, as exemplified in this study, is particularly beneficial to the student who can, by diagnostic testing, be classed as ineffective or below-average in this skill. The results of this study showed the following for this type of student:

A. The difference in mean performance, favoring the experimental group, was so great among the below-average listeners, as defined by pretest behavior, that it permitted over 50 per cent of these experimental below-average listeners to raise themselves to the status of average or above, as defined by post-test behavior, as compared to but 11.6 per cent for the control group.

IV. Listening training, as exemplified in this study, appears not to be beneficial to the student who can, by diagnostic testing, be classed as effective or above average in this skill. There may be several reasons for this, among which are:

A. The materials in this study may be geared to a level of both interest and understanding that is too low to either appeal to or be effective for this above-average group.

B. Insufficient knowledge about the listening habits and behavior of this group may be responsible for the ineffectiveness of the teaching materials.

V. There is some evidence that the male students in this study were more effective in listening to these materials than were the female students, both before and after training.

A. The pre-test performance resulted in slightly higher means for the male students.

B. The difference, favoring the males, on the post-test was found to be highly significant.

VI. As far as the test results of this study are concerned, the time of day during which students listened had no effect upon listening effectiveness.

A. The differences between the performance of students who listened during the morning and the performance of students who listened during the afternoon were found not to be significant.

Recommendations

From the experiences of this writer in conducting this study come the following recommendations:

I. Studies similar to this one should be conducted in which the pre-test and post-test would be identical. While such a condition would introduce a retest-factor variable, it is the opinion of this writer that this variable could be weighed and accounted for by adjustment of results in the second testing to a sufficient degree that the results would be reliable.

II. Further study should be made of the listening habits and behavior of above-average listeners, as determined by diagnostic measurement, which might result in the discovery of training materials and training methodology which would be beneficial in increasing the listening effectiveness of this group.

III. Further study should be made directed toward the improvement of extant listening instruction materials and the development of new materials. Because listening instruction is comparatively new, its materials have been treated with a reverence which they probably do not deserve. Listening instruction has been considered by many as a bold field where the timid should not trod. It is time, now, for a sound and systematic inventory to be made. Revision of materials is in order. Such a process of review might result in the discovery of sound bases for the development of new materials.

IV. Much closer study needs to be made of the listening habits and listening behavior of human beings all the way from nursery school level up through the college years and into adult life. Techniques of observation and of measurement need to be developed so that a more accurate picture of how we listen can be produced. Much of what we think we know is suspect, based upon unscientific methods of observation, testing, and analysis. If it is accurate we need to know that it is. If it is not accurate, it should be discarded. Not much more progress in the development of listening instruction can be made until such graduated studies are underway.

V. Further experiment needs to be made with the kinds of listening experiences that can be integrated with listening instruction. Possibly this field is limited only by the pedagogical ingenuity of the experimenter. A wide variety of such experiences are open for study; such things as recorded lectures of varying length and difficulty, listening exercises based upon giving directions, telling stories, describing events and people, etc., would greatly enrich this phase of instruction.

VI. There is great need for studies to be made in the field of critical listening to persuasive materials. Most of the studies have so far been done in discriminative listening to informative materials. Yet, no program of instruction is complete without training in critical listening. This type of listening seems to be as important as discriminative listening. The national

and international battles that are being waged for the control of men's minds place a great responsibility upon teachers to concern themselves with the problem of critical listening.

With more studies like the one reported here and with additional experimentation in the areas suggested here, it is hoped that the teaching of listening can be raised from its current level of "a novel and interesting idea" to a level where it becomes an integral part of every course in communications skills.

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APPENDICES

APPENDIX A

INSTRUCTIONAL MATERIALS

Listening Training Unit #I

LISTENING AS A FOURTH SKILL

There are four communicative skills; two for expression and two for reception. The expressive skills we know as writing and speaking. The receptive skills are reading and listening.

Throughout your entire school experience training has been given to you in writing, reading, and speaking. You have taken courses in composition and in speech. At Michigan State College you have been exposed to training in reading, and a reading clinic has been established for those of you who are deficient in this skill.

Recently, within the last ten years, the educational world has become interested in listening. Listening can be defined as the "reception and comprehension, reception and evaluation, of orally presented materials". It is, of course, differentiated from hearing. Hearing is nothing more than the awareness of sound; you are aware of the sound of your motor as you drive along the highway. Listening implies something more. It implies mental alertness and comprehension. It, therefore, is not a passive, inactive process like hearing. Rather, it is a very active process that requires work. A good listener works at listening.

This recent interest has grown from many things: radio has made us more dependent upon listening for information; current business practice, with its emphasis upon the spoken word in conferences and over the phone, has made listening important; during World War II it was discovered that the majority of training was given orally and thus listening became a matter of life and death. Studies into the effectiveness of listening,

beginning in about 1934 with the Merton Carver research and extending throughout the next ten years by men like Goldstein at Columbia, Nichols at Minnesota, and others, have shown us a great many things about listening.

We know, for example, that we listen far more than we read, write, or speak. The Rankin study made the following comparisons:

45% of our time is spent listening
30% of our time is spent speaking
16% of our time is spent reading
9% of our time is spent writing

Rankin further found that, in school, 52% of our teaching is spent on reading, 30% of our teaching is on writing, 10% of our teaching is on speaking, and less than 8% of our teaching has anything to do with listening. As you can see, the training emphasis is quite in reverse according to the actual use of the skills. We have found, further, that as a child you listened better than you read; but beginning about the third grade, your listening became inferior progressively to your reading skill. Today, it is pretty evident that as materials presented get increasingly difficult, listening loses its effectiveness and reading becomes the superior mode of reception. Yet, despite this knowledge, you will be listening to college lectures during the next four years that embrace material that is very difficult indeed. We have found, too, that reading and listening skills are pretty closely allied.

One of the most important things found is HOW POOR WE ARE. Study after study seems to indicate that we are, on the average, but from 25% to 40% efficient in this skill. Interpreted, this means that we "get"

only one fourth to a little less than half of what we listen to. Surely, neither you nor I would tolerate this low grade of efficiency from our car or our refrigerator. Surely, this is not good in an educational system that relies so heavily upon the lecture method of instruction.

But, there is hope; we have found that listening can be taught. Listening is being taught at many schools: Minnesota, Air University, Stephens College, Michigan State, and others. It is taught in primarily three different ways:

1. Through listening laboratories where students can go, pull out records, listen, and take progressively harder tests over the materials heard.

2. Through inclusion of listening assignments in speech classes.

3. Through the direct instructional method:

   A. Hour-long lectures about listening such as are found at Air University.

   B. Short lessons in listening, coordinated with lectures, such as at Michigan State.

Next week, we are going to tell you just how successful such listening instruction can be or has been. Before we close today's session, however, and get into the informational lecture for this week, there are some limitations to listening that we want you to be aware of. True, listening is a skill, and a very important one, as we have said. But do we understand its limitations? Do we know its weaknesses?

The limitations of listening are:

1. It is instantaneous. If we "get" something through listening, we must get it when it is being said. In reading, you

have the privilege of re-reading if you don't understand the first time through. But not so in listening. Because it is instantaneous, you can perhaps better understand now why we defined it as implying mental alertness. You can't be slow, asleep, or dragging your mental feet. You must "be there when the band starts playing" so to speak.

2. Another limitation lay in the greater chance for misunderstanding of what is said. If the speaker is not clear either in his choice of words, his combinations of words, or his enunciaition of his words, then the listener may misunderstand what was said. Or, if the listener is "only half there", he may also misunderstand, even though the speaker has made it clear. Misunderstanding leads to misinformation and poor comprehension, or, in short, poor listening.

3. Group interaction may place a limitation on listening. Listening is social, usually. When you listen in class, you are a part of a group. That very group may hinder that listening. The group may be listless and you catch the atmosphere; the group may be belligerent and you catch that "mental battle-ground" atmosphere; the group may be noisy so that you actually cannot hear much of what is said; or the person next to you may be writing a letter or knitting argyle socks and your attention is diverted from

the lecturer to this extra-curricular activity going on near you. All of these group activities may hinder your effectiveness as a listener.

4. The fourth, and last limitation, is the difficulty of the material being presented. We said before that as material becomes more difficult, listening loses its effectiveness. Studies have proved this to be true. Therefore, it is obvious that the quality of the content may help or hinder listening. Yet, we are not prone to admit that because something is difficult it cannot be listened to. What we must say is this: as the material gets more difficult, both the speaker and the listener must work harder in order to achieve comprehension. Listening to a lecture in an Economics class on the subject of The Law of Supply and Demand will require stricter attention to listening than listening to your room-mate describe a movie he has just seen.

With these limitations in mind, now, let's listen to this informational lecture ... ever mindful that listening is instantaneous, that there is great likelihood of misunderstanding, that the group may divert your attention, and some of the material may be difficult. At the conclusion of the lecture, we'll take a few minutes to talk over the lecture in the light of these listening limitations.

Listening Training Unit #2

THE KINDS OF LISTENING

Last week, you were introduced to the fourth skill, listening. You were informed of its tremendous importance in modern living and in the education which you are undertaking. Certain things that were known about listening were talked over with you. Among these were the pretty well established facts that listening can be taught, is being taught, and yet possesses certain limitations:

1. The fact that it is instantaneous.
2. The great possibility of misunderstanding the spoken word.
3. The presence of group distractions.
4. The degree of difficulty of the material you receive by listening.

Before beginning today's lesson on the kinds of listening, let's look at some of the results that training in listening has produced.

1. At Whittier College several years ago, David Krueger reported gains in average scores up to 7.6 points.

2. At Minnesota they have been able to raise the lowest 10 per cent of the listeners up to the average of the entire freshmen class.

3. Heilman, in a study at Michigan State College, two years ago, discovered a significant gain in the lowest quarter of the students tested.

So, from these results, we have added evidence that listening can be taught, and taught with results.

Now let's turn our attention to the kinds of listening. We should be able to identify three types:

1. Discriminative listening.
2. Critical listening.
3. Appreciative listening.

Discriminative listening is that which we do to informative materials. Informative speech might include the talks given on the college lecture-concert series, newscasts on the radio, educational broadcasts, and, of course, the college classroom lecture. Perhaps this is the informative speech that concerns you most right now.

Critical listening is that which we do to persuasive talking. Sales talks, radio commercials, propaganda talks, campaign speeches, debates, and argumentative bull sessions fall into the category of persuasive talking. Naturally, we do a little more here than in discriminative listening, for our purpose is not just to absorb information, but we must weigh, critically, such information, evidence, and opinion that we get. This critical weighing gives the name to this second type of listening.

The third kind of listening is called appreciative. This means what it says ... listening to appreciate. Listening to music, to plays, to comedy programs and such would fall into this category. Here we have only one purpose, to enjoy ourselves through listening.

In the first two terms of this course we are going to concern ourselves solely with discriminative listening to informative materials. Naturally, this is our starting point because most of the college lectures you will hear will be of this informative nature. Many of the speeches you will give in class are also of this nature. So it makes a good starting point.

If we are going to concern ourselves with listening to informative materials, perhaps we had better review the purpose of informative speech. Just what are we supposed to be listening for? As you have already

learned, or will very soon, one of the major purposes of oral communication, or speech, is to inform. When the speaker prepares such a talk, his job as communicator is to pass on to the listener the information which he has collected and organized into presentable form. This, then, is the purpose of informative speech ... to transmit information. Therefore, the purpose of listening to such speech is to "get" that information. Your relationship, as a listener, to the speaker is as a "receiver of his information". For example, he may be orally giving a set of directions on how to get to some place. Have you ever had to ask such a person all over again how to get there? If so, you did not receive his information. Many times, here in this lecture, we have had to repeat to students to write their instructor's name on their lecture sheets, their section number, etc. Why? Because many listeners did not get it the first time, did not receive the information given. During the war there were times when vital information could be given only once. You listened in order to live longer. Perhaps even today, someone sitting next to you in class will turn to you after the professor has made an assignment, has given information, and ask you that old question, "What did he say?"

To be sure, there is much responsibility on the speaker. We cannot condone garbled directions on other forms of poorly handled oral information. But it is surprising how many people will still ask you all over again even though you have said in effect, "Now the first thing you do is this; the next thing is this, etc.".

Let's repeat your role as listener in discriminative listening. You are a receiver of information. Your job is to get that information.

How well you get it will determine in large degree your skill as a listener.

For the next 25 minutes you are going to assume the role, as you have been all along, of discriminative listeners. You will hear an informative lecture on _____ _____. When we finish, we'll check to see how well you listened.

Listening Training Unit #3

PREPARATION FOR LISTENING
(Good listening habit no. 1)

Last week in our talk to you about listening we described three kinds of listening:

1. Discriminative listening to informative materials.
2. Critical listening to persuasive materials.
3. Appreciative listening.

We said that during III and II2 we were going to concentrate on discriminative listening. After last week's lecture, some of you discovered that you didn't do too good a job of getting what the lecturer had said ... that you fell down as a receiver of information.

Today's listening lesson is called HOW TO PREPARE FOR LISTENING. Among all of the habits that we have been able to find among good listeners, this is habit number I. We must be prepared to listen. I can imagine many of you saying to yourselves, "something else to prepare for". Think a minute about how you prepare to read. First you get into a reading mood, which is sometimes hard when your reading is study; then you find a comfortable chair, or a hard one if you prefer; then you "get situated", which probably involves opening your notebook, sharpening your pencils, and a few other odds and ends. At long last you settle down to the business of reading. Now, may I ask you...is there any reason why listening shouldn't be equally prepared for? In reading, your time was your own; if you wished to take ten minutes to get prepared, you could take ten minutes. In listening, however, you do not have this luxury of time. The lecturer begins, and you should then be ready. So most preparation for listening must take place before the speaker begins.

I observed today as you came in that some of you got all set. You opened your notebooks, took out your writing equipment, settled down in your seats, and got ready to listen. Others of you were still looking dreamily out the window, reading the college newspaper, combing your hair, repairing your make-up and other things long after I had started to talk. Look around you when you go to your next class and see for yourself how many people are not ready to listen when the instructor starts to talk. Mr. Irvin, in a study at Michigan State College several years ago, found that most students begin listening too late. This can be serious, because many times the speaker will give out some very important information in the first few words of his talk. In one lecture session last year, Mr. Irvin said, as his first words, "please do not take notes today". More than half the class took notes. They had not heard his first words because they were still busy getting ready to listen.

There are three ways for you to become prepared to listen. The first is: come physically prepared. Now this means a little more than just bringing your ears with you. Sometimes, and students reported this, you are just too tired to do effective listening. So get the kind of rest and sleep you need in order to do a good day's work of listening. That is one aspect of physical preparedness. Second, in physical preparedness, sit where you can hear the speaker. In some cases, students do a better job of listening if they also can see the speaker. But, whatever your requirements are, meet them before listening begins. Another aspect of physical preparedness concerns the tools of listening...

your notebooks, pencils or pens. These should be with you, open, and ready for use before the speaker begins. I know this sounds a little fundamental, and perhaps childish, but students will even come to a writing laboratory minus the equipment with which to write. So, physical preparedness refers to you physically and to the tools with which you work in listening to college lectures.

The second kind of preparation concerns your emotions. Be emotionally prepared to listen. This means, check your worries at the door. No one can listen effectively and have his mind on his financial state, the state of his romance, what he will wear at tonight's party, or the letters from home. Now, these are all legitimate worries and thoughts, and we all have them. Just don't keep them in mind when you are busy at listening. There is really plenty of time during the day to worry about things. Your class time should not be used in this manner. Mr. Dow, of our department, gave some good advice to the students last year. He said, "learn to live in one-hour periods". A good football coach, a good army general, or a good cook will all tell you the same thing ... you cannot do the job at hand if you carry your worries with you. There used to be a song which admonished us to check our razors and guns at the door .... we'll bear repetition and revision by suggesting that you check your worries at the door. In a study made two years ago here, one of the biggest hindrances to good listening was the worries over tests that had just been turned back and on which the students had not done too well. Worries you are going to have, but let us keep them on ice for you until after the classes are over.

The third and last kind of preparation you need before listening is intellectual preparation. Most of you have the necessary mental equipment to do a very effective job of listening. But what kind of condition is it in when the speaker begins. For example, if you are in a class where the lectures follow each other in sequence day after day, it would be wise to look over your notes prior to today's lecture to see what was said last time. That can easily be done. If material was assigned for reading last time, perhaps today's lecture will build on that material so it would be wise to read it before this present lecture. Studies here have shown clearly that students missed much of what was said because they had not become acquainted with the vocabulary the teacher was using. Yet, that vocabulary had been explained in the interim reading which had been assigned. The least you can do is to look at the title of the day's lecture or take it down. This will tell you what the lecture is about. This alone may be enough to get your mind "set" to receive what is said. Many times during a class one can hear one student ask another, "what's he talking about?" These students who weren't mentally prepared to listen are like the people who come in to a movie at the halfway mark and are from then on confused about what is taking place and why.

In summary, then, good listeners begin listening when the speaker begins to talk. Good listeners are ready to listen physically, emotionally, and intellectually. I'd like to throw this challenge to you....GO TO ALL LECTURES PREPARED TO LISTEN. Let's accept that challenge right now. I'm going to lecture to you for about 25 minutes on _____

_____.

Suggestions for "check-out" period for Unit #3

1. During the lecture, observe the students. See how many appeared prepared to listen to the lecture.

2. Point out the significant excellencies and deficiencies you observed in their preparation.

3. Request students to identify the type of listening done today:

   A. Discriminative
   B. Critical
   C. Appreciative

4. Ask for a description of any group distractions they may have observed or from which they suffered.

5. Ask students to identify your first point. This will check their preparedness also.

6. Ask the students to identify the purpose of the lecture.

7. Ask the students to identify the name of the lecture.

8. Ask how many couldn't shake their worries.

9. Was any of the material too difficult.

10. How many main points and what were they.

11. I used an illustration _____. (if any) What point did it illustrate?

12. I used some figures under this point _____. (if any) What were those figures?

(A final word might be: Remember that the first good listening habit is to be prepared to listen ... prepared physically, emotionally, and intellectually. You will be observed in your classes and in these lecture sessions as to your preparedness. Listening begins when the speaker begins.)

Listening Training Unit #4

EXERCISING EMOTIONAL CONTROL IN LISTENING
(good habit number 2)

Up to this time we have said many things about listening. We have discussed with you its importance and how much of it we do. We are confident that it can be taught; that good results accrue from teaching it. We described three kinds of listening: discriminative, critical, and appreciative. So far we are concerned with discriminative. Some of the limitations of listening as a medium of learning were discussed. Last week, we talked about good listening habit number I, Preparation for Listening. I have observed today that many of you took that lesson to heart and appeared prepared to listen. I hope that you remembered the kinds of preparation when you went to other classes: physical, emotional, and intellectual preparation.

Today I want to discuss with you good listening habit number two, Exercising Emotional Control During Listening. You will recall an earlier lecture this term in which certain Emotional Barriers to Communication were discussed. If you listened well you will remember that the lecturer described two kinds of emotional barriers: Identification and Projection. I believe that it is easy to understand and that any kind of emotional block will hinder good listening. Recent studies here showed certain types of emotional blocks that interfered with good listening. For example, one student became irritated because the speaker's face had a "foreign" cast to it, and he emotionally battled the speaker all during the talk. Consequently, he didn't listen. Another became insensed at the speaker's

use of the word nigger and, even though the speaker was quoting, the student became emotionally upset and didn't listen. Another student attributed his poor listening to the speaker's irritating manner of touching his finger to his ear. Other students just didn't like the subject while others fought the speaker all the way because what the speaker was saying seemed to be in contradiction to what they believed. These are all emotional blocks and they hinder effective listening.

If lack of emotional control blocks good listening then we, as listeners, must put the brakes on our emotions. Emotional control during listening consists in controlling our flash impulses to react negatively to the speaker himself, or his words, or his material. For example, if the speaker says that drinking is harmful physically, you may get an immediate impulse to argue with him mentally. "It has never hurt you", you say to yourself. "This guy is all wet, etc..." Now, emotional control would exist when you say to yourself, "it has never hurt me, but I'll listen to this fellow. Perhaps, after all, he has some information that is valuable to me". This kind of control is hard to exercise, but it must be done for good listening.

What are some of the ways in which you can exercise emotional control? First, maintain an awareness of your motives in listening. In other words, ask yourself, "Why Am I Listening?" If the talk is informational, surely the information embedded therein has some value for you. Some of the basic motives for all activity also apply to listening. One of these motives is self-preservation. Perhaps the information about the harmful effects of drinking will save my life, or save me the pain of ulcers.

During the war, a majority of the information orally communicated to men in service was information designed to protect them from injury and from death. Let's take a very simple set of directions about fixing an electric plug. At one place in the directions, the speaker will warn you of a danger. He will advise you against wet hands or feet when working with live electrical power. This is self-preservation. Much of the material you get in college in certain courses is likewise important to the preservation of your health and your life. Another motive may be wealth. Is this material I'm listening to going to permit me to gain more wealth? Another motive is personal power. Is this lecture going to contribute to my personal power? There are many motives that operate within us: desires for sentiments, affections, wealth, power, security, adventure, comfort. Your job as a listener, as a good listener, is to analyze your motives, determine for yourself what of value may be in this information, and listen; not blaming the speaker because he has a certain kind of face, or uses a word you dislike, or has a lecture title that is not glamorous enough to suit you. Good listeners are constantly aware of their motives in listening.

Secondly, good listeners assume the responsibility for getting the meaning of the lectures. Learning in the lecture situation is primarily a responsibility of the listener. No one can make you learn, no matter how many times they talk to you. Good listeners say to themselves, "I'd rather be playing golf; I don't like the speaker, I don't like his subject, but he's challenging me to learn, and by golly, I'm going to learn." Poor listeners will "fake" attention. You know the tricks. You sit with

your chin in your hands, eyes on the instructor, but the mind is miles away. Some of you will nod at certain spots to impress the speaker that you got what he said. There are devious ways of faking attention. Usually, it is these fakers who blame the lecturer for what they didn't get out of his lecture. Yet it was they who did not accept the responsibility. Perhaps your mother has said some night at the table, "I can cook the food, and set it in front of you, but you have to eat it". The same is true in listening. The speaker can gather information and dish it up for you but you have to assume the responsibility for absorbing it.

Thirdly, good listeners postpone their worries until listening is over. We talked about this last week in preparation for listening. Leave your worries at the door. The mind is a wonderful mechanism, but few of us can worry with one part of it and get clearly what a speaker is saying with another part of it. There is time to worry. Get yourself a worry-bird and set aside some part of the day for worry-time.

Fourthly, good listeners also postpone their evaluation of the speaker or his subject. Obviously, there are going to be both speakers and subjects that you may take an immediate dislike to. If you become emotionally upset, you will not listen. Sometimes, we are pleasantly surprised by both the speaker and his subject. But, give him and his subject a chance. If you want to dislike him, or his subject, listen first, and do your disliking afterwards. Many times in class when the professor says, "today we're going to talk about rules of grammar", you can hear the moans ripple across the room. These moans are symbols of dissatisfaction. Many have announced through moaning that they are not

going to listen. Yet, many a lecture on this subject has been interesting, amusing, and certainly helpful.

Lastly, good listeners avoid mental argument with the speaker and avoid answering questions mentally that he may ask in the course of his lecture. For example, suppose the speaker says, by way of introduction, "what would you be doing today, if it were not for the invention of the incandescent lamp?". That is his device to introduce a point perhaps about the luxuries we enjoy. If you answer his question, for the next few minutes while he saying something important, you will be back there drawing mental pictures of what you would be doing by candle-light, or lamplight. Whatever your pictures are, you are not listening. Many times, in controversial subjects, about which we may know little, and about which we ought to know more, we are prone to begin to argue with the speaker the minute he says something that goes counter to our own beliefs. Picture a bull session. Someone says, "I don't believe you have to go to church to be a Christian". Usually, there is a chorus of voices saying, "well, I do..let me tell you, etc., etc.". In a lecture, if a speaker said the same thing, we would not hear a chorus of voices, but we could be sure that many people would stop listening at this point, and begin a very subtle battle of arguments with the speaker. Good listeners postpone their arguing and their answering until after the listening is finished.

So, what we have said today about emotional control is simply that good listening requires some personal discipline: an understanding of your motives in listening; assuming responsibility for learning;

postponing your worries; postponing your evaluations of the speaker or his suoject; and the avoidance of mental answering and mental argument.

Suggestions for the "check-out" period for Unit #4

1. Comment on your observations of the students' preparation for listening.

2. Ask how many felt that they were ready to listen when you began to talk.

3. Ask some of the others why they were not ready.

4. Ask how many students got the first point. What was it?

5. Ask how many got the second point.

6. Ask for some specific detail that you may have given.

7. Ask for an expression of certain factors which interfered with listening during your lecture. (This can take time, but it is worth it). You might, if you wished, put some statements or questions in your lecture which would tend to test their emotional control. Perhaps an irritating gesture could be planned and used.)

8. Point up the fact that there are individual differences; that what might set one student off emotionally, doesn't bother another.

9. Ask for any examples, from your own lecture, where students found themselves answering questions.

10. Ask for any examples, from your own lecture, where students found themselves ready and willing to argue mentally with you.

11. Was any of the material too difficult?

12. Were they aware of any group distractions? What were they?

13. Were there portions of the lecture that they wished could be repeated?

14. How many have teachers to whom they take a personal dislike and find it hard to pay attention in class? Do they think they can exercise emotional control from now on?

(Final word: restate the purpose of emotional control. Summarize the things they must do to exercise emotional control. Challenge them to exercise it.)

Listening Training Unit #5

STRUCTURALIZING IN LISTENING
(good habit number 3)

Last week we emphasized the necessity for controlling our emotions during listening and gave some specific suggestions as to how this could be done: by analyzing our motives in listening; by accepting the responsibility of learning by listening; by postponing our worries; by postponing our evaluations of the speaker and his subject; and by avoiding mental argument with the speaker. In short, we gave you a formula for exercising a discipline over your inner self which might permit you to "get" the information the speaker had to offer.

This week, we want to talk about good listening habit number three. How many of you remember good listening habit number one? (ask for a show of hands ... the habit is Be Prepared to Listen). We've already made reference to good listening habit number two when we reviewed Exercising Emotional Control just a moment ago. Habit number three is this: STRUCTURALIZING. When a talk is prepared it is built around a well-defined pattern of organization. You've been introduced to this concept in your Written and Spoken English classes. Therefore, when we listen to a talk, we should be able to find the basic structural pattern, because it is upon this basic pattern or skeleton that the flesh of the talk is hung. Ideas are related to each other. As listeners we need not only get the ideas but also their relationships. Some talks will be well organized. Others will not be. The poorer the organization, or the less obvious the organization, the harder our job of listening becomes. When we speak, we

present a mass of information and thoughts and ideas that are meaningful to the speaker. But the listener must also get meaning from them, if they are to benefit him. The speaker is in the position of leading the listener through this material. It is a great help to the listener if he understands the basic pathways along which he might be lead, if he can literally "see" the speaker's plan of organization. That is our purpose today; to discuss the basic structural patterns along which informative speeches are built.

The basic informative speech pattern of structure includes five very important elements: 1) the title; 2) the specific purpose; 3) the introduction; 4) the development; 5) the conclusion.

The first part of the well-prepared expository or informative talk is its title. This is usually not found in the ordinary classroom instructive lecture. In these sessions we always either tell you what it is or put it on the board. When no title is given, a speaker usually lets you know indirectly very early in the talk what the talk is to be about. As a listener, your first job is to find out what the talk is to be about. If there is a title, you are aided in this respect. If not, your job is to discover what the talk is about, and discover this very early.

The second basic element in informative speech structure is the specific purpose. We know, of course, that the general purpose of the talk is to inform, but we need to know about what we are to be informed. This specific purpose is sometimes stated and sometimes not. If it is stated at the beginning of the lecture such as "today I want to talk to you about the three phases of ulcers", then you and I as listeners know

that at the end of the talk we should know about the three phases of ulcers. The specific purpose can be regarded as the final or ultimate result of a talk, all summed up in one sentence. Often, in classroom lectures, this specific purpose is not given. Thus, our job of listening becomes harder. There are times when we cannot state the specific purpose until after the talk is over. Students generally do a pretty good job of finding this purpose. In a study made several years ago here, over 80% of the students could state the purpose of the talk even though it had purposely been left unstated by the speaker.

The third basic element of structure is the introduction. It serves usually two major purposes: 1) to get the attention of the listener; 2) to briefly orient or acquaint the listener with what is to come. You will become acquainted with many techniques of attention-getting ... from funny stories to long pauses. As a listener, however, your major job is to recognize the introduction, realize that the speaker is not yet into the main body of his talk, and realize that in this introduction you may be given valuable clues as to what will be in the main portion of the talk. The orienting function of the introduction may be done in a number of ways:

1. By giving background or historical material pertinent to the subject.

2. By giving the speaker's special point of view. He may say, "this subject, as I see it, or from my own experience, can be treated in this way".

3. By the speaker's explanation as to how he will develop his subject. He may even go so far as to give you a blueprint of the various main points he will cover.

4. By giving definitions. If terms are to be used that may be unfamiliar, usually the speaker will define them at this point.

5. By explanations as to what the speaker considers fundamental issues, questions, and problems that he expects to discuss.

Yet, you will hear speeches that have no introductions. As a listener you have been denied the mental "warm-up" that the introduction provides. You will simply have to roll up your sleeves and get into the main body of the talk without benefit of preliminaries.

The fourth element in speech structure is the development itself, the main body of the talk. Here you will find in detail the central theme or governing idea of the entire talk. This main developmental element consists of two parts: general statements; supporting materials. For example, in today's lecture I will make several general statements; then I will, under each, marshall my evidence. These general statements are recognizable and must be recognized. The supporting material is usually of four kinds:

1. Information ... facts, figures, etc.
2. Examples ....
3. Comparisons ... the use of analogies.
4. Testimony ... quotations from authorities, etc.

As listeners our major task is to make the proper relationships between the supporting materials and the general statements they support.

Our fifth and last element of basic speech structure is the conclusion. The purpose of the conclusion is to summarize in some fashion the chief ideas that have been presented. There are generally three types of conclusions:

1. The summary.
2. A repetition of the specific purpose.
3. An illustration which, in story form or other form, tells in a different way what the speaker said in the developmental element of his talk.

The summary is helpful in many ways. It wraps up in a neat little package the chief ideas. It may help us find a point we missed along the way. It will help sometimes to establisb firmly the specific purpose of the talk.

Thus, we see that, as listeners, if we know the basic structure of informative talks, we'll have some idea of just how the speaker may lead us through this new information we are about to receive. Once again, that basic structure is:

1. Title
2. Specific purpose
3. Introduction
4. Developmental elements
5. Conclusion.

Keep this structure ever in mind when you begin to listen.

Suggestions for "check-out" period for Unit #5

1. With what general purpose of speaking have we been primarily concerned in listening training so far? (informative)

2. What kind of listening is done to informative speaking? (discriminative)

3. How many were not prepared to listen today? Why?

4. Were you aware of any emotional blocks to your listening today?
   A. Worries?
   B. Dislike for my lecture subject?
   C. Any irritating mannerisms I might have shown?
   D. Any tendencies to argue mentally with what I said?

5. Was any of the material too difficult?

6. Were there any group distractions which hindered your listening?

7. What was the title of my talk? How many did not get it? (would suggest here that the lecturer not write his title on the board at the beginning of the hour)

8. Did I use an introduction?

9. In my introduction, did I use any attention-getting devices?

10. In my introduction what did I do to orient you to the subject?

11. What would you say is the specific purpose of the lecture I have just given? Did anyone have something different?

12. In the developmental portion of my lecture, how many main points were there?
   A. What was the first one?
   B. And so on through all of them.

13. What kind of supporting materials did I use?
   A. Information
   B. Examples
   C. Authority
   D. Testimony

14. Did I have a conclusion?

15. How many found the conclusion helpful?

16. Could you recognize the conclusion? (would suggest here that the lecturer either label it as he speaks or not label it and challenge them in the check-out to recognize it)

(A final word might be: look always for the basic structure of the talk. Know where the speaker is and where he is going.

Listening Training Unit #6

LISTENING FOR MAIN POINTS
(good habit number 4)

Last week in our listening training period we discussed habit number three of all good listeners ... that habit was the ability to Structuralize while listening. You will remember that we pointed out the five elements of all informative speech organization: the title; the specific purpose; the introduction; the developmental portion; and the conclusion. By the way, this is an informative talk about listening which I'm giving now. Which one of the five elements am I now using? (answer ... introduction ... specifically developing the introduction by giving background material) It is our hope that during this past week you have been able to find the structural pattern of most of the lectures to which you have listened. In Mr. Irvin's study made here several year's ago, he found that less than 27% of the students could structuralize a very well-organized lecture. Confusion in structure seemed to grow from two things mainly:

1. Students mistook a single major point in the lecture for the purpose of the entire lecture.

2. Students could not relate supporting materials such as facts and figures, testimony, examples to the points which they supported.

So, our emphasis upon structure is not just idle talk.

Today, we are continuing a discussion of structure but we are isolating one part or one of the five elements ... the developmental or main body of the informative talk, and our specific purpose in today's training period is THE USE OF MAIN POINTS TO AID THE LISTENER which is good habit number four. Main points are the major points or major issues

around which the body of the talk is built. Your own experience as a student of communication has taught you that in the preparation of a talk you build it around certain main points. You divide your information into categories. Each category represents a major division and the statement that labels that major division is a main point. You know by now that there is no set number of main points in a talk; there might be one or ten, depending upon the length of the talk. As listeners, it is our job to recognize these main points and to associate with each the appropriate supporting materials.

How can we recognize them? Sometimes they are numbered. The speaker will orally number them as he begins to discuss them like this, "now let's look at point number one", or "the second point I wish to discuss is". This makes recognition easy. However, many speakers identify their main points, not by numbering them for you, but simply by altering their voices. The speaker may raise his voice or lower it, increase or decrease its emphasis or strength, increase or decrease his rate of speaking. Such transitional methods are difficult to recognize and the listener must be ever alert to do so. Another way in which we can identify main points is to observe the speaker's physical actions. Often, these are cues. Most definite are gestures such as the use of the hands or fingers which indicate a change from one point to another. Sometimes, speakers will move, perhaps from one side of the platform to the other; at other times the shift may be more slight. Facial expression, too, is often an indicator of transition from point to point. Almost any method of identifying main points other than the use of words is very subtle and extremely hard

to catch. You will no doubt recall at this point that we said listening is work!

Other than verbally numbering main points speakers often use methods of announcing these points which we call transitional words and transitional phrases. These are recognizable. Such terms as "furthermore", "to continue", "in addition", "on the other hand", "another point for consideration", etc. are warnings to the listener that a new development of the central idea of the talk may be coming up. Your handbook by Perrin lists many such terms. It would be wise to read over that list.

Perhaps you are asking, "Why this emphasis upon main points?" Obviously, the principal task of the listener is to follow the central theme of the talk. This theme is embedded in the title, in the specific purpose, and the rest of the talk is woven around it. The main points of a talk are pilings that hold up this central idea, the frame upon which the central idea is laid. To miss the main points might possibly be analogous to going to a movie, seeing the newsreel, the Mickey Mouse, then being called out of the theatre, and returning an hour and a half later just when the screen blazens out the two words THE END. You missed the main show. Yes, outside you can see the title. But you missed the major developments, the plot, the action, the sequence of shots that makes this title meaningful. In listening, you don't want to miss the main show. Some makers of rope used to weave into the fabric of that rope a red thread. Intelligent buyers of rope wouldn't buy rope without that red thread. In an informative talk, the central theme is a red thread that is weaved into the whole fabric of the talk. The thread

without the rest of the rope is useless. The rope without the thread is not bought by the good listeners.

Our emphasis upon main points, therefore, is rooted in the hope that as listeners you can see not only the over-all structural pattern of a talk and be able to follow it, but that you can pierce that structure and pick out the major thought divisions, relate to each division the mass of information the speaker gives as support, and finish the listening job with a picture in your mind similar to the picture that is in the speaker's mind. Only if such is the result, has effective communication taken place between the speaker and you as a listener.

In summary, remember the ways in which it is possible to identify main points: by the speaker's words as he numbers his points; by the speaker's words as he introduces new points with special transitional words and phrases; by the more subtle vocal changes and physical actions of the speaker.

Listening Training Unit #7

LISTENING FOR COMPREHENSION
(good habit number 5)

Today's listening training session is our last one in this term. A bit of review would be appropriate here. Our first unit dealt with listening as a fourth skill, and, even though we were isolating it for particular discussion, it is but a part of a larger whole, communication. Since then we have divided the skill of listening into certain phases for discussion. We discussed the kinds of listening:

1. Discriminative ... to informative materials
2. Critical ... to persuasive materials
3. Appreciative

Our concentration has been on discriminative listening because we are primarily concerned with this kind of listening at this stage of our study of the communication process and because a listener must be effective in this area before he can become a good critical listener. We actually began our listening training by stressing the necessity of being prepared to listen and certain concrete suggestions were made to help you achieve preparedness. Emotional control during listening was explained, and again suggestion was made as to how to discipline yourself. The next two sessions dealt with speech structure from the listener's point of view: determining the basic structure; recognizing main points. All of these sessions have had one central purpose ... to help you to comprehend during listening. To comprehend is to understand. Thus, listening with understanding is our objective. We might phrase it a different way, "when we listen, do we GET it?"

While every training unit up to this point has had as its ultimate objective your comprehension of orally presented materials, today's session will deal with this subject directly. Good habit number five in listening is LISTENING FOR COMPREHENSION. You might ask, "what other things can you do if you listen?" The British Broadcasting Company, in their studies of listening, have indicated that you can listen just for recognition rather than for comprehension. For example, the speaker may be talking about atomic energy. You will recognize the terms but you need not understand them. Recognition, therefore, is not the same as understanding or comprehension.

How can you become more effective in comprehension? One procedure we can emphasize is to watch for the stated purpose of the talk. The speaker may say, "our purpose today is" or something similar to that. This will be the basis for our understanding of the subject matter that is to follow. But suppose the speaker does not state his purpose. It is at this point that we begin to search for possible purposes. His title or his subject plus what he says in the first few minutes of his talk may add up to a purpose which we can detect. Sometimes, it is wise for us to write down a statement of what we think the purpose to be and check it later either as the talk develops or after it is finished. Some attempt on the listener's part to discover the purpose of the talk will be of the same aid as knowing where you are headed when starting a trip.

Another aid to comprehension is to identify and relate the main points of a talk. Last week, you will remember, we emphasized the

identification of main points. We stressed the methods by which they can be identified: by numbering, by transitional words and phrases the speaker uses, and by vocal and physical changes in the speaker's delivery pattern. Recognizing main points aids us to get the "drift" of the speaker's materials. Let's use this example: suppose the speaker announces his title as Radio As A Means of Communication. At this point we have a label for the subject matter about to come. The materials will be about radio ... and as communication ... not as anything else. He may say, then, "our purpose today is to bring to you an analysis of the phases of radio which are applicable to our study of the various media of communication". At this point we have established a goal, as listeners. This material is pitched in our direction, will be about certain phases of radio which will not only be discussed but analyzed. In the development of his subject the speaker has three main points: 1) Radio is a big business; 2) Radio exerts a cultural influence on us; 3) Radio exerts a social influence on us. Now, with the title, the purpose and these three main points in our minds, or in our notes, we can get the "drift" of this talk, comprehend it. We see the over-all pattern and are better able to fit into the proper places the mass of facts, figures, examples, comparisons, etc., that the speaker will use.

A final point to aid us in comprehension is to <u>discriminate</u> among the materials presented to us. This is where our present kind of listening gets its name ... discriminative. But among what shall we discriminate? Nichols, of the University of Minnesota, tells us that good listeners will discriminate between:

1. Statements of fact and statements of principle.
2. Ideas and the examples illustrating those ideas.
3. Evidence and the arguments this evidence supports.

Let's use our radio lecture again as an example. In the discussion of the second major point, the cultural influence of radio, the speaker states a principle, "culture is spread by communication". To illustrate this principle, he states facts about how isolated groups of the population now know a great deal more about the world than they used to; perhaps he quotes the recent figures on the use of bathtubs in certain areas. Here he has given us both fact and principle. We should be able to discriminate between them. Poor listeners usually boast that they "listened for the facts"; but as you know, isolated facts, unattached or not related to principles are useless. If we have just the facts, we do not comprehend or understand.

How about discrimination between ideas and examples. Let's suppose the speaker gives us an "idea", namely that we should be fully aware of the power of radio as a means of persuasion. This is a new idea to many of us. He goes on to illustrate this by recounting in detail the story of the Orson Wells' broadcast of a few year's back called The Man From Mars. He may give more illustrations. The point here is ... what do you end up with? Some of you will have just the stories, the illustrations; others will see the relationships between these stories and the idea of the power of radio to persuade. If you see these relationships, then you comprehend. In order to see these relations you must differentiate between the idea presented and the illustrations or examples used to develop that idea.

The third area of discrimination, as we mentioned, was between evidence and argument. Speakers will use arguments. They are usually statements that the speaker makes quite definitely, controversial in nature; and to support them, he arrays a mass of evidence. Suppose, in this radio lecture, he makes the statement, "radio favors the political party in power". Obviously, this can't be principle, because a principle is found consistently ... we can predict upon the basis of principle. Obviously, this statement is more than an idea. Perhaps once it was an idea, but in the speaker's mind it now is strong enough that he will argue about it and seek evidence to support it. Therefore, we would call his statement an argument. Certainly, it is controversial. Any professional radio man in the listening group would probably challenge it. The speaker, to support this argument, arranges his evidence. He may tell us that in a certain year, the democrats made more radio talks than the republicans, etc. He builds a foundation under his argument. Can you as listeners, discriminate between the argument and the supporting evidence. If you can you are well on your way to being a good listener, because you will understand or comprehend. You may even be able to say to yourself, "I don't think much of his argument because the evidence is pretty weak".

You recall that the entire purpose of discriminative listening is to comprehend. All of the skills embedded in listening will aid you toward this purpose. In addition to those we have discussed in the previous six weeks, the ones we talked about today will also help; effective discrimination between fact and principle; between idea and

example; and between argument and evidence. Let's see if you can apply these things now to this lecture I am about to give.

APPENDIX B

TESTS

NICHOLS TEST OF LISTENING COMPREHENSION (PRE-TEST) BIOLOGY

You have heard the recorded lecture on Biology. Answer the following questions according to the information given in the recorded lecture.

Mark the answers on the answer sheet. Do not make any marks on these questions.

1. The type of material in the recorded lecture can best be described as:

    1. expository
    2. emotional
    3. contentious
    4. poetic

2. Of the evolutionist it can be said that he:

    1. denies that there is a God
    2. attributes all change to the will of God
    3. is interested in how life began
    4. is interested in changes in life after it once began

3. Evolutionary changes are known to be from:

    1. plastic to less plastic
    2. inflexible to flexible
    3. Specialized to generalized types
    4. general to universal types

4. Historically, it can be said of evolution that:

    1. the public has been universally misled
    2. Aristotle went wrong for once
    3. the idea is comparatively new
    4. the idea was doubtless held by the Eqyptians

5. The speaker implied that Darwin's achievements may well be regarded with:

    1. reverence
    2. skepticism
    3. respect
    4. doubt

6. During the Middle Ages the knowledge of evolution:

    1. grew very steadily
    2. had few significant additions
    3. lost ground
    4. had one really significant addition

(OVER)

7. Darwin's method of study can best be described as:

    1. didactic
    2. deductive
    3. scientific
    4. pseudo-scientific

8. The principle of evolution has now been:

    1. universally accepted
    2. accepted with reservations
    3. denied by some scientists
    4. denied by some laymen

9. The chief doctrine rivaling evolution is:

    1. the LaPlacian theory
    2. embodied in the story of Adam and Eve
    3. that of cynicism
    4. that of mythology

10. We are able to follow the main trends of evolution in such large groups as the:

    1. crayfish
    2. jellyfish
    3. medusa
    4. vertebrates

11. For the casual observer the species of animals and plants seem to be:

    1. ever-changing
    2. immutable
    3. constantly adjusting
    4. increasing in complexity

12. How many individuals were actually mentioned by name in the recorded lecture?

    1. one
    2. two
    3. three
    4. four

End of Biology Test

NICHOLS TEST OF LISTENING COMPREHENSION (PRE-TEST) SOCIOLOGY

You have heard the recorded lecture on Sociology. Answer the following questions according to the information given in the recorded lecture.

Mark your answers on the answer sheet. Do not make any marks on these questions.

Note that the first question is number 13. Begin your answers on the answer sheet with number 13.

13. This recorded lecture excerpt was primarily concerned with:

1. sociology
2. biology
3. vocal eugenists
4. the important elements of a eugenics program

14. The number of elements in the program urged by our vocal eugenists is:

1. two
2. three
3. four
4. six

15. The first demand of the eugenists' program is for wider research. The chief value of such research would be:

1. favorable public opinion
2. knowledge of acquired qualities
3. specially geared laboratories
4. knowledge of inheritance of human traits

16. A program of education to make known to everyone the results of eugenic research is needed. Its chief value would be:

1. to create intelligent public ppinion
2. to improve the stock in this generation
3. to improve the stock in the next generation
4. to motivate our eugenists

17. The results of research should be made known to:

1. the illiterate layman
2. those prejudiced against eugenics
3. every man and woman
4. children under 16

(OVER)

18. Future generations should:

1. learn Mendel's laws
2. be taught to mate more intelligently
3. rely on improving plant and animal production
4. avoid marrying into families of a different race

19. The word dysgenic means:

1. sterile
2. morally undesirable
3. biologically defective
4. biologically non-reproductive

20. Of sterilization as a means of checking dysgenic classes it can be said that it has proved:

1. impractical
2. too expensive
3. inexpensive
4. to have real promise

21. The speaker has implied that the unfit:

1. are now largely in institutions
2. are now, in part, in institutions.
3. seldom reproduce their kind
4. need not be confined if watched by their families

22. One difficulty with sterilization laws is the problem of:

1. constitutionality
2. surgical difficulty
3. the health of the subject
4. the numbers involved

23. That the more able classes are maintaining their numbers in comparison with the less able classes seems:

1. improbable
2. probable
3. rather certain
4. hypothetical

24. Efforts to increase the proportion of able classes in the population have been:

1. universal
2. limited to the English speaking nations
3. made by several nations
4. limited to the United States

End of Sociology Test

NICHOLS TEST OF LISTENING COMPREHENSION (POST-TEST) LITERATURE

You have heard the recorded lecture on Literature. Answer the following questions according to the information given in the recorded lecture.

Mark your answers on the answer sheet. Do not make any marks on these questions.

1. The most logical title to give this recorded lecture excerpt would be:

    1. A Literary Adventure
    2. The Importance of Reading
    3. A Liberal Education
    4. Human Nature

2. The O. Henry story is in itself primarily:

    1. pathetic
    2. moralizing
    3. humorous
    4. tragic

3. Which conclusion can best be drawn from the O. Henry story?

    1. That man is gregarious in nature.
    2. That women are unpredictable.
    3. That reading affects one's personality.
    4. That facts are more valuable than poetry.

4. The different magazines being published may be numbered in:

    1. thousands
    2. millions
    3. hundreds
    4. scores

5. Americans ought to:

    1. try to read .001% of the books in the world
    2. tackle the problem of what to read individually
    3. subscribe to a daily newspaper
    4. write at least one book each

6. The speaker implied that the question of what to read and why we do read are:

    1. both affected by the materials available
    2. closely related
    3. too difficult for the layman to solve
    4. quite unrelated

(OVER)

7. In his essay Thomas Huxley makes plain his conviction that:

   1. life is somewhat like a game of chess
   2. we ought to learn to play chess
   3. giving and getting out of check is most vital in chess
   4. chess is fascinating

8. Huxley makes it plain that in life our opposing player is:

   1. Satan
   2. God
   3. hasty and remorseless
   4. always fair and just

9. That enjoyment may motivate reading was illustrated by which one of the following?

   1. the work of Stevenson
   2. the work of Defoe
   3. the story of the Welsh blacksmith
   4. the quotation from Carlyle

10. The author of Robinson Crusoe was:

    1. Robert Louis Stevenson
    2. Daniel Defoe
    3. Charles Lamb
    4. Sanderson Pratt

11. Of the books mentioned as being of an inspirational type, the most significant has probably been:

    1. The Rubaiyat
    2. Robinson Crusoe
    3. The Bible
    4. Pitcairn Island

12. The author of Half Mile Down is:

    1. Nordoff Hall
    2. Daniel Defoe
    3. Robert Louis Stevenson
    4. William Beebe

End of Literature Test

NICHOLS TEST OF LISTENING COMPREHENSION (POST-TEST) ECONOMICS

You have heard the recorded lecture on Economics. Answer the following questions according to the information given in the recorded lecture.

Mark your answers on the answer sheet. Do not make any marks on these questions.

Note that the first question is number 13. Begin your answers on the answer sheet with number 13.

13. Which one of the following words, each appearing in the definition of accounting, gives the best clue to that science?

    1. rights
    2. enterprise
    3. statistics
    4. method

14. Which of the following holds most true of the business partnership?

    1. A uniformity law guides its organization.
    2. Internal disputes are frequent.
    3. It is seldom composed of more than two persons.
    4. One co-owner is usually the senior partner.

15. Which of the following conditions is most true of the corporation?

    1. It is synonymous with "big business".
    2. It is best represented by Northern Pump Co.
    3. It is treated legally as an artificial being.
    4. It is made up of many members.

16. Which of the following is the best example of a private corporation?

    1. The City of St. Paul
    2. Bob Feller Enterprises
    3. U.S. Steel
    4. Twin-City Transit Co.

17. Which of the following is the best example of a public corporation?

    1. The Mercy Hospital
    2. The General Hospital
    3. The telephone company
    4. Northern States Power

(OVER)

18. Which one of the following makes most frequent use of the accountants products?
    1. the potential stockholder
    2. many parties
    3. bankers approached for loans
    4. the immediate business executive

19. Which of the following statements best describes the relationship of property to property rights?
    1. The two are exactly synonymous.
    2. The two are always co-existant.
    3. Both are concerned with money values.
    4. Both involve claims to things.

20. Which of the following names describes our common accounting system?
    1. the double-entry system
    2. the single-entry system
    3. the triple-entry system
    4. the net-worth system

21. Which one of the following statements is most true with respect to the equation that "properties equal property rights"?
    1. It classifies property and property rights.
    2. It simplifies accounting.
    3. It underlies all accounting.
    4. It illustrates the methods of accounting.

22. The speaker stated or implied which one of the following?
    1. Property rights equal liabilities.
    2. Property rights equal net worth.
    3. Property rights equal creditor's rights plus owner's rights.
    4. Property rights equal owner's rights plus net worth.

23. Creditor's rights are which one of the following?
    1. assets
    2. liabilities
    3. proprietorship
    4. value of your credit rating

24. Which one of the following is false?
    1. Assets equal liabilities plus net worth.
    2. Assets minus liabilities equal net worth.
    3. Assets minus net worth equal liabilities.
    4. Assets plus net worth equal liabilities.

End of Economics Test

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