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DEVELOPING AUDITORY DISCRIMINATION SKILLS
IN FIRST GRADE

A Thesis
Presented to
the Graduate Faculty
Central Washington State College

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

by
Myrna Harrison Weinman

July 1966

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APPROVED FOR THE GRADUATE FACULTY

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CHAPTER I

THE PROBLEM AND DEFINITION OF TERMS USED

I. THE PROBLEM

Introduction

One of the major goals of first grade is to establish a firm foundation in reading. If a good reading foundation is to be developed, it is essential for the child to acquire one of the basic skills--that of auditory discrimination. Heilman states that auditory discrimination is related to reading in two ways: (1) its relation to language and speech and, (2) its role in phonics analysis (14:62). Robinson states that there are approximately forty-five different sounds that compose our total speaking language. These forty-five different sounds compose approximately 600,000 words (18:160). Thus the composition of our language makes auditory discrimination essential to accurate comprehension and interpretation. Auditory discrimination is related to speech because hearing a sound correctly is the key to speaking it correctly. Betts and Dechant strongly contend that without accurate auditory discrimination, a child cannot learn to speak correctly.

The English language is considered by the above named authorities to be a phonetic language. If a child confuses or distorts sounds, it is frequently impossible for him to

associate the correct sound with the visual symbol. This skill is vital to phonetic analysis.

Need for the Study

Auditory discrimination begins at home. Children are sensitive to likenesses and differences in sounds. Children have learned some auditory discrimination by listening to adults talk. This is the manner in which a child learns to speak. For reading purposes a higher degree of auditory discrimination is necessary than has been required during the pre-school years. Thus, when a child enters school he needs to further develop his auditory discrimination skills.

An average classroom will contain children with a great variation in auditory discrimination abilities. Tinker writes that, "While some children need auditory discrimination training more than others, all children will profit from it" (24:104). To adequately instruct children in the skills of auditory discrimination, the teacher should be thoroughly familiar with the auditory discrimination skills that first graders will need. The first grade teacher should also be prepared to formulate and administer a program of training in auditory discrimination. The auditory discrimination skills required in first grade are discussed in Chapter II and suggested activities for developing these skills are discussed in Chapter III.

Purpose of the Study

The purpose of this study was two-fold. The first objective was to review research done in the area of auditory discrimination to discover how auditory discrimination is related to reading, its importance to reading and whether or not it merits the time required for developing auditory discrimination skills. The second objective was to formulate a collection of games and activities for developing skills in the auditory discrimination of consonants and consonant blends, and present them to a class of first grade children to see if they would aid in developing the required skills. A simple test would be given to the children preceding and following the auditory discrimination training to help determine the value of the training program.

II. DEFINITIONS OF TERMS USED

For the purpose of this study, the following terms were defined as stated below.

Auditory discrimination. "Auditory discrimination is the ability to discriminate between sounds or phonemes of a language" (8:143). Accurate differentiation between sounds should ultimately lead to the association between the sound and the printed symbol. Auditory discrimination is therefore considered to be the ability to differentiate

between sounds and automatically associate the sound with the appropriate printed symbol.

Auditory acuity. "Auditory acuity may be thought of as the ability to respond to various frequencies (tones) at various intensities (levels of loudness)" (23:6). Auditory acuity is a physical ability and not a learned skill.

Hearing. "Hearing is used to designate the process by which speech sounds in the form of sound waves are received and modified by the ear" (23:6).

Listening. "Listening refers to the process of becoming aware of sound sequences. In listening to speech, the person first identifies the component sounds and then recognizes sound sequences as known words through the avenues of auditory analysis, mental reorganization and/or association of meaning" (23:6).

Auding. "Auding refers to the process by which the continuous flow of words is translated into meaning" (23:6).

Reading. "Reading is the meaningful interpretation of printed or written verbal symbols" (13:13). Reading involves sensing, perceiving, achieving meaning and reacting on the basis of the individual background and experience.

Reading readiness. "Reading readiness is the developmental stage at which constitutional and environmental factors have prepared the child for reading instruction" (8:127). Reading readiness is a factor concerning all grade levels. Because a child has achieved readiness for one level of instruction does not necessarily mean that he is ready for a higher level of instruction. Reading readiness is a continuum that is a vital concern at all levels (14:10).

CHAPTER II

REVIEW OF RELATED LITERATURE

I. DEFINITION OF READING READINESS

Reading readiness is defined by Dechant as, ". . . the developmental stage at which constitutional and environmental factors have prepared the child for reading instruction" (8:127). Reading readiness applies to all grade levels. At every level of reading, a child must achieve a state of readiness for the next level before higher instruction is given. Most reading experts agree that there are four main factors affecting reading readiness. These are: (1) auditory discrimination, (2) visual discrimination, (3) range of information, and (4) mental age. It is during this period of reading readiness that the child needs to begin to expand his background of knowledge and to develop auditory and visual discrimination skills.

II. RELATIONSHIP BETWEEN READING READINESS AND AUDITORY DISCRIMINATION

Some ability in auditory discrimination is necessary before reading instruction begins. While some reading specialists consider auditory discrimination to be one of the most important phases of the reading readiness program, others consider it to be the most important skill to be

developed during the reading readiness period. Artly, Strang, Tinker, DeBoer and Durrell all strongly support this point of view. Dawson and Durrell point out that auditory discrimination is an ability which must be consistently developed through the first several years of school. Reading readiness and auditory discrimination are relevant factors to all grade levels. A child who has achieved adequate auditory discrimination skills for first grade has not necessarily achieved a state of auditory readiness for second grade. Thus, the second grade teacher must expand and build the skills until the child has reached a point where he has an adequate foundation for a higher level of instruction. This is a continuous process throughout the educational program.

III. THE ROLE OF AUDITORY DISCRIMINATION IN READING

Auditory discrimination is vital to successful reading because a child who hears words correctly can use what he hears as a clue for identifying printed words. Durrell, Smith and William Gray all agree that auditory discrimination is essential in developing skill in phonetic analysis. Spache points out that auditory discrimination abilities allow the pupil to match his pronunciation of unknown printed words with his auditory memory of the word. Being able to see the elements of a word is important but it does no good to see them unless the child knows the sound of the

elements. To achieve success in reading, a child must be able to automatically associate the printed symbol he sees with the appropriate speech sound.

IV. FACTORS PRODUCING INADEQUATE AUDITORY DISCRIMINATION

Hester lists three main factors which produce inadequate auditory discrimination. They are: (1) physical hearing disability, (2) infantile speech, and (3) inadequate experience in listening (15:53). A child who cannot hear sounds clearly will most likely be unable to differentiate between them. Every effort should be made to locate children with hearing defects. Some hearing defects may be corrected or improved with medical care.

Infantile speech many times is carried over from the time of beginning speech. This is usually caused because the child has not learned to perceive the differences in sound. Parents can help avoid this situation by pronouncing words correctly and not as the child pronounces them in his first attempts at speech.

The third main factor of inadequate auditory discrimination is that of inadequate experience in listening. The child must learn to listen and retain the image produced by the sound waves. A child must have practice in discriminating between gross sounds before he is able to discriminate between letter sounds.

Evidence of any of these three factors should serve as a warning that a problem in auditory discrimination may exist.

V. THE NEED FOR TRAINING IN AUDITORY DISCRIMINATION

Smith and Lillian Gray support reading specialists in their belief that auditory discrimination begins at home. Without some auditory discrimination skills, a child could not have learned to talk. Even though most children have some auditory discrimination skills when they enter school, further training is usually necessary before a child begins his formal reading instruction. Reading requires a higher degree of discrimination than the child has needed previously. During pre-school years it may be adequate for a child to hear words as a whole but in reading he needs to be able to distinguish between parts of a word. A child may acquire a small sight vocabulary without auditory discrimination but he meets confusion when the words look alike. To relieve this confusion the child must have auditory discrimination skills. Auditory discrimination is essential in spelling and phonetic analysis. A child must be able to associate the sounds he hears with their printed symbols. Without this ability, phonics and spelling instruction is of little value to him.

To further stress the need for training in auditory discrimination, Dechant states that the average six-year-old

child cannot consistently distinguish between the sounds of g and k, m and p, and p and b. Durrell cites his study of the auditory discrimination abilities of beginning first grade children in which he reports, "On the best group measures we have been able to design, 30 per cent of the children get zero scores" (9:42).

VI. PROBLEMS INCURRED BY LACK OF TRAINING IN AUDITORY DISCRIMINATION

The two major problems incurred by lack of training in auditory discrimination are a lack of reading readiness and speech retardation. Incorrect auditory discrimination may contribute to a lack of reading readiness or a reading deficiency. Betts states that ". . . incorrect auditory associations may contribute to unanalyzed difficulties in initial reading situations" (3:129). Dechant believes that failure to discriminate means difficulty in interpretation. To avoid lack of this phase of readiness, they highly recommend training in auditory discrimination.

According to Dechant and Heilman, inaccurate auditory discrimination leads to speech defects. A child must be able to hear correctly if he is to speak correctly. This is especially true of initial and final sounds. Strang points out that while correct speech is more closely related to success in reading in the elementary schools, researchers

believe that faulty pronunciation may account for errors in comprehension by high school and college students who are retarded readers (22:182).

Durrell and Dechant state that without training in auditory discrimination, phonics training is ineffectual. If a child confuses or distorts sounds, it is frequently impossible for him to associate the correct sound with the visual symbol. Dechant quotes Cordts as saying that, "Unless a child learns to differentiate between sounds in words, he has an inadequate foundation for phonics" (8:144). William Gray states that the first step to phonetic analysis is training in auditory discrimination (12:95). Heilman reports that a lack of skill in discriminating between speech sounds impairs reading.

A lack of auditory acuity must not be confused with a lack of auditory discrimination. Auditory acuity is a physical factor. Without auditory acuity, a child may have difficulty in developing auditory discrimination skills. Appendix A shows the relationship of auditory acuity to auditory discrimination.

VII. POSITIVE EFFECTS OF A STRUCTURED PROGRAM OF AUDITORY DISCRIMINATION TRAINING

Research indicates that training in auditory discrimination is instrumental to success in reading. Durrell and Murphy report that training in auditory discrimination

increases general reading achievement. Under the Duggins study the children receiving auditory discrimination training were better sight readers, had better listening skills and showed an increase in comprehension. DeBoer found a high degree of correlation between auditory discrimination and successful reading. Dechant states that a child who notices the distinct sounds in spoken words usually learns to read easily. Betts found that accurate auditory discrimination contributes to good speech habits and an awareness of speech sounds. Burton found that learning to speak carefully and pronounce words accurately greatly depends upon strengthening auditory discrimination. Good speech habits and accurate pronunciation are both considered to be essential factors to phonetic insight.

VIII. GOALS OF AUDITORY DISCRIMINATION TRAINING

The ultimate goal of training in auditory discrimination is for the child to automatically associate printed symbols with pronunciation. Eventually a child should come to realize that words that sound alike frequently look alike. Smith lists five points found by M. D. Vernon to be auditory discrimination skills which must be acquired if successful reading is to be achieved. These are:

1. Each word and its sound patterns are separate entities with their peculiar, invariable, and universal characteristics.

2. Each word's sound pattern can be analyzed into a succession of sounds with a characteristic and invariable sequence.
3. These unitary sounds can be generalized in the sense that they occur, in approximately the same form but in different sequences and in different words.
4. The sounds correspond to different letter shapes visually perceived, but
5. Unfortunately, in the English language, the relationship between sounds and visual percepts vary considerably from word to word (20:44).

Smith and Dechant state that the ultimate goal is that a child be able to discriminate between phonetic elements of a word and then make the appropriate associations between spoken and written words. Gradually the child should realize that words that sound alike frequently look alike (8:143).

Adams and Gray believe that by the end of first grade a child should have acquired an auditory-visual perception of rhyming words, initial consonants and blends, final consonants, and recognize basic suffixes such as s, es, ed, ing, and y (1:335).

Durrell also is specific in the goals of auditory discrimination he believes first grade children should achieve. Durrell lists the following goals.

1. Identify most consonant sounds and blends in initial and final position.
2. Know letter names, both capital and lower case.

3. Recognize basic suffixes--s, es, ed, ing, y.
4. Recognize these consonants sounds and blends in the initial position (th, st, wh, sh, br, ch, dr, tr, cl, fr, gr, pl, sm, tw, fl, sw, sp), and the following consonants and blends in the final position (sh, ch, al, on, ck, ty, nk, lk, by, nt, rk, we, ty).
5. Recognize the following phonograms (in, and, ike, is, oke, ock, own, ed, oy, ay, as, ed, ig, ouse, at, an, un, am, it, ome, ack, ank, ut, un, ell, all, ill, ame, og, ee, up, id, ool, en, oll, ot, op, ap, ing, ow) (9:232).

IX. ESSENTIAL AUDITORY DISCRIMINATION SKILLS AND RECOMMENDED SEQUENCE OF AUDITORY DISCRIMINATION TRAINING

While most reading specialists agree that sequential training is not essential, they do believe that a program of training in auditory discrimination is strengthened if it follows a sequential form. Basically the reading experts recommend the same sequential form. Since there are only slight variations in the sequences recommended, the example stated below is a composite of the recommendations of these reading specialists.

Research in the field of auditory discrimination has shown certain auditory discrimination skills essential to reading. As the level of work increases, the need for additional auditory discrimination skills increases. Five basic skills are considered essential in first grade. These are:

Discrimination of Gross Sounds

Reading specialists agree that differentiation between gross sounds is the first step in developing auditory discrimination. Gross discrimination includes such things as discrimination between animal sounds, familiar voices and sounds of familiar objects.

Discrimination of Likenesses and Differences in Words

Recognizing likenesses and differences in words is the next step. Durrell recommends the use of such words as "fall, men, play, will, run, pig, bell, in, out, look and fill" (9:83) in teaching children to hear likenesses and differences in words.

Discrimination of Initial Consonant Sounds

The next sequential step in auditory discrimination training is the initial consonant sounds. Durrell suggests the following order of consonant sounds: "f, b, h, g, c, l, m, d, j, k, p, r, w, s, t, y, v, th, wh, ch, sh, dr, tr, gr, br, fr, cl, fl and pl" (9:83).

Discrimination of Final Consonant Sounds

The sounds of f, g, b, l, m, d, p, r, k, n, s, t, and y in the final position of a word are usually taught next. This phase of the training is usually acquired rapidly if the child has previously learned to discriminate between the initial consonant sounds.

Discrimination of Medial Consonant Sounds

Training in discrimination of consonant sounds in the medial position usually follows discrimination of consonants in the final position. Once the child is able to discriminate consonant sounds in the initial and final position, the medial position usually poses little difficulty. Harris notes that most training in one sound should come just before the introduction of the printed symbol (13:194).

These skills, while considered essential in first grade, are also essential to all reading levels. As the reading level progresses, the child will need to develop his auditory discrimination in these areas to a higher degree. With the importance of training in auditory discrimination well established, Tinker offers encouragement to parents and teachers when he writes that children with normal hearing respond readily to training in auditory discrimination.

CHAPTER III

THE PROGRAM AND SELECTED GAMES AND ACTIVITIES FOR DEVELOPING AUDITORY DISCRIMINATION

With the relationship of auditory discrimination and successful reading well established, reading specialists have developed games and activities to help develop the necessary skills. This chapter will discuss the background and situation of the children involved in the program. The auditory discrimination skills deemed by the reading specialists to be essential to successful reading will be considered individually and games and activities for developing these skills will be listed.

I. THE PROGRAM

Background

The socio-economic background of the children ranged from average to very low. This statement is made on the basis of the family employment record, source of family income, type of housing available in the area and from a federal appraisal of the school. The majority of the children were from homes where the family income was obtained from welfare, Aid To Dependent Children or unemployment compensation. The school is located in a low-rent housing district occupied by multi-ethnic groups. While the

majority of the children involved in the program were Caucasian, almost every race group was represented. Among the twenty-six children taking both the pre-test and the post-test, there were eighteen Caucasian children. The remainder of the group consisted of one Negro child, one Negro-Caucasian child, two Mexican children, one Mexican-Caucasian child, one Oriental-Caucasian, one Indian-Caucasian, and one Puerto Rican child. Four of the children were from bilingual homes. The school was appraised by the federal government and included in its program for underprivileged children.

The Science Research Associates, Primary Mental Abilities Test which was given in September showed the range of I.Q. scores to be from mid-average to retarded.

Many of the children in this area are transient children. Therefore, in a class which averaged 32 children, only twenty-six children remained in the classroom during the entire second semester.

The Test

The test used was The McKee Inventory of Phonetic Skills, Test One. This test includes twenty-eight items on initial consonants and blends, thirteen final consonant sounds, and five items concerning structural elements, for a total of forty-four items. (See Appendix B for a copy of the test and Appendix C for the teachers instructions.)

Procedure Used

The test was mimeographed so that each child had a copy. Unfortunately, an elite typewriter was all that was available for duplicating the tests. Therefore the print on both the pre-test and the post-test was smaller than was desirable. Because of the small print, the children were asked to fold their paper in half vertically and use 1" x 6" tagboard markers to help them keep the place.

The pre-test and the post-test were each given over a two-day period. Twenty items were completed the first day and the remaining twenty-four the second day. Each testing session lasted approximately twenty to twenty-five minutes. The pre-test was given at the close of the first semester and the post-test at the close of the second semester. Since the class was divided into four reading groups, the test was administered to one reading group at a time. The children were told that they need not be able to read the word to answer the questions. They were to listen to and look for the sounds indicated.

Use Made of Pre-Test Scores

The pre-test scores clearly displayed the need for additional work in the area of auditory discrimination. Since a considerable amount of class time had been spent on listening exercises during the first semester and the "Listen and Say" television series was viewed weekly and

a follow-up carried out, it was found that many children still could not discriminate between sounds.

The pre-test scores were used to help indicate the areas of weakness. In most cases the pre-test exemplified the need for auditory discrimination training in all skills. The area of initial consonant discrimination seemed to be particularly weak. Thus, much of the training was carried out in the area of initial consonant discrimination.

Training Program

In addition to the regular individual and small group instruction given during reading time, practice with rhyming words, initial consonants and blends, and final consonants was carried out as seatwork. This type of practice was usually a combination of oral and written work. An effort was made to spend approximately five to ten minutes daily on extra auditory discrimination activities. However, this was not a rigid program and there were times when this extra practice was not given. The Durrell and Sullivan book Building Word Power (10) was used extensively because it presented many varied activities for developing the various auditory discrimination skills.

Although there is some disagreement among the reading specialists as to when vowels are taught, most of them seem to believe vowels should be taught after the basic skills recommended in Chapter II. Durrell strongly states that

vowels should be left until the consonant skills are mastered (9:83). Since the majority of the children involved in the study had not mastered the basic auditory discrimination skills, vowels were not studied as a class project. Vowels were introduced on an individual basis to only a few children. Therefore the ability to discriminate between vowels was not considered in this study.

II. GAMES AND ACTIVITIES FOR DEVELOPING AUDITORY DISCRIMINATION

Activities for Developing Discrimination of Gross Sounds

Before a child can discriminate between letter sounds, he must be able to discriminate between gross sounds. Hester lists several activities that are useful in developing gross discrimination. These are:

1. Listen to music and respond physically. Later, the child should respond with rhythm instruments.
2. Listen to see how many different insect sounds can be heard.
3. Tap on glasses of different levels of water and listen to the different sounds.
4. Place ear on the table and listen for scratching sounds made by another person on the underside of the table.
5. Slash holes in a dandelion stalk and blow through the stalk.
6. Use seashells and listen for the sound of the sea.
7. Imitate common sounds (15:105-107).

Artly suggests that rest time is a particularly good time to develop the memory portion of auditory discrimination. Artly recommends that the children be asked to close their eyes and think how things would sound. The teacher might ask the children to see if they can hear train sounds, water lapping against the beach, or wind in the trees (2:27).

Dechant also lists activities for developing gross auditory discrimination. Dechant suggests using bells of different tones, tapping on the desk with a pencil and learning to recognize class member's voices as good activities for developing gross auditory discrimination (8:146).

Discrimination Between Likenesses and Differences in Words

Discriminating between likenesses and differences in words is also considered a necessary skill if accurate auditory discrimination is to be achieved. Most writers suggest the use of nursery rhymes as a beginning place. Adams and Gray suggest the following procedure. The teacher would read aloud:

Jack and Jill
 Went up the hill
 To fetch a pail of water.
 Jack fell down
 And broke his crown
 And Jill came tumbling after.

The teacher would then ask the class to tell the rhyming words they heard. The children then would repeat the rhyme with the teacher. The same procedure could be used for any nursery rhyme or jingle (1:337).

Adams and Gray also suggest another exercise for developing auditory discrimination of rhyming words. In this exercise the teacher pronounces a word such as "play." The children then respond orally with words that rhyme with play (1:337).

Bond suggests the following activity to develop discrimination of rhyming words. In this activity the children would be asked to clap once when they heard a word which did not belong in the group of rhyming words. The teacher would then pronounce a series of words such as (may, play, mat, day) (4:102). In a further exercise on rhyming words, Bond suggests the following activity. The children would be asked to select a word from a series of words that sounds most like a given word. The teacher might pronounce "string" as the key word. Then the teacher would pronounce a group of words such as (ring, home, play, rat). Bond continues with another activity. In this activity the teacher would pronounce a series of words such as (ball, call, fall, tall) and the children would be asked to tell how these words were alike (4:102).

These exercises on developing likenesses in words may be reversed for developing differences in words. In such exercises the children would be asked to find the word that does not rhyme, or the word that is different in a series of words. They would also tell why it is different.

Bond recommends that rhyming words be presented in a

normal speaking manner and not broken up. According to Bond, breaking up a word like Muf-fet or tuf-fet may develop a blending problem for the child. Above all, Bond believes it is important to use words in pleasant sounding ways (4:103).

Dechant suggests two activities for developing auditory discrimination of rhyming words. In one activity the teacher would pronounce three words, two of which rhyme. The children would then select the two rhyming words. In another activity Dechant suggests that the teacher print a word on the chalk board. The children then find pictures of things that rhyme with the printed word (8:146-152).

Discrimination of Initial Consonants and Consonant Blends

Developing auditory discrimination of initial consonants is another important skill. For developing this skill, a sample lesson from the Durrell and Sullivan book, Building Word Power is presented. This lesson will be on activities to help develop discrimination of the "r" sound.

These are some words that begin with 'r,' like run. (Dictate these words. Write the words on the blackboard as you say them.)

radio raisin ring ride

I'll say some other words that begin with 'r' and you say them after me.

rubber rope rocking horse river radiator
rag reach redbreast

These are people's names that begin with 'r.'
Say them after me.

Robert Richard Roy Ralph Ruth

Raymond Rosemary

Now I am going to play a game. Listen carefully so I will not catch any little ears. Here are some riddles. The answers to these riddles begin with 'r.' Can you guess the answers?

1. What do you do with a bell? (ring it)
2. What do you do in an automobile? (ride)
3. What do you have to keep your feet dry on rainy days? (rubbers)
4. What pulls Santa's sleigh? (reindeer)
5. We listen to programs on the (radio) (10:47-48).

Durrell and Sullivan also present a lesson on developing the visual symbol with each of their auditory lessons.

Bond suggests the following activity for developing discrimination of initial consonants. The children are asked to clap when they hear a wrong word in a series of words of similar initial sounds. An example would be a series of words like (hat, has, land, hand). Bond also suggests that the teacher pronounce a list of words with similar initial consonants such as (run, rat, ring, row). Here the children are asked to tell how these words are alike (4:102).

Adams and Gray recommend that the teacher pronounce a word and ask the children to supply words that begin with that sound (1:338). Adams and Gray also would use sentences which repeat the initial consonant sound. An example would be, "Dig doggie, dig down in the deep dirt for your big

bone" (1:338). The children would respond orally with the words that begin with the "d" sound. A further activity suggested by Adams and Gray is the use of riddles adapted to the classroom. As an example, the teacher might say, "I see something on the bulletin board that the boys in this room like to eat and it begins like dates" (1:338).

Dechant also lists some activities for developing auditory discrimination of initial consonants. They are as follows:

1. Have the children listen for classmates names that begin with the same sound.
2. Note the similarities and differences in pairs of words (cat - can) (cat - bat).
3. Show three pictures--of which two begin with the same sound.
4. Demonstrate a sound such as 'b' and ask the pupils to provide answers that begin with 'b' to some questions. An example would be: What do you use to hit a ball? (bat)
5. Give the pupils a sheet of paper containing several pictures. Ask the pupils to underline each picture that does not begin with a given sound (8:146-152).

William Gray states that substitution is the easiest way to teach initial consonant recognition. As an example, he lists (look, book, cook) (12:96).

Exercises such as the ones presented for developing discrimination of initial consonant sounds may be used for developing discrimination of blends and digraphs.

Discrimination of Final Consonant Sounds

Children must also be able to hear final sounds. To

develop this skill Dechant suggests that children have practice in hearing similarities and differences in final consonants. He also suggests an activity which requires children to identify the position of a sound. The teacher might pronounce the letter "m." The children would be asked to find the position of the "m" in the following words: (Pam, mops, mat (8:146-152)).

DeBoer also suggests that children select a word which ends differently from a group of words pronounced by the teacher (7:69).

Durrell and Sullivan list lessons from developing discrimination of final sounds that are very similar to the ones used in developing discrimination of initial sounds (10:68). A sample lesson on initial consonant sounds was quoted previously.

Discrimination of Medial Consonant Sounds

Reading specialists tend to agree that the discrimination of medial sounds should follow the training in discrimination of the initial and final consonants or consonant blends. For this skill activities such as the following have been developed.

The teacher would pronounce a word such as "milk" and ask the children to identify the initial sound. The teacher would then pronounce a group of words containing "m" in different positions. The children would be asked

to identify the position of the "m" sound.

In a similar exercise the children are to respond on paper. The children will be presented a paper showing pictures and spaces for identifying the position of the sound. As an example of the "m" sound, the child may see a picture of a camel with the following answers from which to choose: _____m, _____m_____, m_____. The child then circles the form showing the correct position of the "m."

CHAPTER IV

ANALYSIS OF DATA, SUMMARY AND CONCLUSIONS AND RECOMMENDATIONS

This program was conducted as a descriptive rather than statistical study of developing auditory discrimination in first grade children. It was felt that a descriptive study would be of more value to the writer than would a statistical study. The uncontrollable variables made it impossible to produce a completely valid study. These variables will be discussed in the Analysis of the Data.

Analysis of Data

With all the uncontrollable variables, it was impossible to have completely valid test results. The test used was the McKee Inventory of Phonetic Skills, Test One. Since there are no norms for this test, the test results could not be compared.

Table I, located on page 30, Raw Scores on Pre-Test and Post-Test and Percent of Increase, is a tabulation of the twenty-six children involved in both the pre-test and post-test. They are listed from high to low by the percentage of increase. To preserve the identity of the children, each child was given a code number. The first letter of the code number indicates the child's rank in the test results. A is used to indicate the high score and Z the

TABLE I
 RAW SCORES ON PRE-TEST AND POST-TEST
 AND PERCENTAGE OF INCREASE

Child	Pre-Test	Post-Test	Percent of Increase
A-M1	0	41	93.1
B-F1	5	42	84.2
C-F1	5	40	79.6
D-M2	7	38	70.4
E-F1	6	37	70.4
F-F1	12	41	65.9
G-F1	2	27	60.8
H-M1	7	33	59.1
I-M2	0	26	59.0
J-F4	8	33	56.2
K-M2	0	23	52.2
L-M3	2	21	47.6
M-F1	24	42	41.0
N-F1	23	41	40.9
O-F2	8	23	35.7
P-M3	11	25	31.8
Q-M4	0	11	25.0
R-M3	6	16	22.7
S-M4	8	17	19.8
T-F3	0	8	18.8
U-F1	37	43	13.7
V-M4	0	5	11.3
W-F4	5	8	7.5
X-M3	4	6	4.2
Y-F3	8	8	0.0
Z-F4	8	5	-7.5

low score. The second letter indicates the sex of the child. The letter M is used to indicate male and F to indicate female. The last number of the code number indicates the reading group of the child. The most advanced reading group is indicated by the number 1 and the lowest reading group by the number 4. The test scores listed under the headings "Pre-Test" and "Post-Test" are raw scores indicating the total number correct. The percent of increase shows the gain between the pre-test and the post-test.

Some of the individual problems may help explain the results. Child Z-F4, showing a decrease, suffered a forty percent hearing loss in both ears. This was not corrected until late in the year. From observations made during the administration of the tests, it appeared as though this child guessed almost entirely on both the pre-test and the post-test.

Tests through the Yakima Student Personnel Services indicated Child V-M4 to be retarded. This child, scheduled for special education, showed an increase of 11.3 percent. From observations made during the administration of the tests, it appeared as though this child was making random responses. The validity of this score is questioned.

Child A-M1, who showed the highest percent of increase, had an emotional problem. On the pre-test this child would not even try to keep the place. It was felt that Child A-M1

could have performed much better than a "0" score on the pre-test.

Testing through the Yakima Student Personnel Services indicated that Child L-M3 suffered a severe emotional problem. On the pre-test and the last 24 questions of the post-test this child refused to try because it "looked hard."

Child X-M3 suffered from cataracts on both eyes. It is not known how much this affected his test scores.

Table I indicates that the children in the most advanced reading group made the most significant gains. These children all rated average on the Science Research Associates, Primary Mental Abilities Test given in September. These children were the most mature children in the classroom also.

Eleven of the thirteen children ranged above a 50 percent gain. All but two of the first eleven children listed in Table I remained in the classroom throughout the entire year. The other two children entered in December. Seven of the children making the most gain were involved in Project Head Start during the summer of 1965. Two others listed among the first eleven children received kindergarten training.

The middle section indicating children L-M3 through R-M3 achieved more than a 20 percent increase in auditory discrimination abilities.

Children M-F1 and N-F1 did not show an impressive gain in the percent of increase. However, their raw scores on the pre-test indicate two of the highest scores on the pre-test. Therefore, their gain was not as high as those with lower raw scores on the pre-test. These children were in the same classroom all year and both were in Project Head Start during the summer of 1965.

Within this group was one child who was repeating first grade, three children who were involved in Project Head Start during the summer of 1965 and one child who had a kindergarten background.

Eight children made less than 20 percent increase in auditory discrimination abilities. Child U-F1 had a very high score on the pre-test. Therefore, this child could not show a large percentage of increase in auditory discrimination abilities.

Within this group is the child with the hearing problem, the retarded child, the child with cataracts, and two of the children with strong emotional problems. The above problems were diagnosed either by a physician or through the Yakima Student Personnel Services testing program. The retarded child and the two children with emotional difficulties were involved in Project Head Start during the summer of 1965.

SUMMARY AND CONCLUSIONS

Summary

Research has proven that auditory discrimination is vital to successful reading. Studies in auditory discrimination reveal that children enter first grade with a wide range of abilities in auditory discrimination. Research has also proven that most children require training to develop the auditory discrimination skills needed for reading. While some children need training in auditory discrimination more than others, all children can benefit from the training. Most reading specialists agree that a sequential training program in auditory discrimination is highly desirable.

Many games and activities have been developed to assist in developing the needed auditory discrimination skills. These games and activities can be adapted to meet the needs of the class. Many variations are also available to help maintain student interest in the program.

The McKee Inventory of Phonetic Skills, Test One, was given at the close of the first semester. The results of this test were used to indicate the areas in need of training.

Training in auditory discrimination was given through class work in the form of oral response, chalkboard exercises and some written exercises. Individual and small

group practice was carried out within the four separate reading groups. In addition to this training, an effort was made to spend approximately five to ten minutes daily in additional practice. This additional practice was given in the form of a class activity. Since the program was very flexible, this five to ten minutes of extra practice was occasionally eliminated.

Conclusions

On the basis of this study it was found that training in auditory discrimination can be beneficial to all children who have normal hearing abilities. Since the most mature children in the group made the most substantial gains, it was concluded that training in auditory discrimination is facilitated by maturity. A child must achieve a state of readiness before training can be beneficial to him. A state of readiness for training in auditory discrimination is reached more rapidly when a child has a kindergarten or its equivalent background. Remaining within one classroom also assists a child in reaching a state of readiness for auditory discrimination training.

Training in auditory discrimination increases word attack skills. The children grew much more independent in their reading activities as their auditory discrimination abilities increased. The children appeared more self-confident in their reading abilities. With the independence in

reading the children became more interested in books. Now they could "read the words" where previously they only looked at the pictures. The reading independence gained by the children was well worth the additional time spent in auditory discrimination activities.

A training program in auditory discrimination can be made very interesting to the children. Most children enjoy auditory discrimination training exercises and readily respond to it. Considering the abilities of the children involved, their personal problems and their low socio-economic background, it was felt that the children made substantial gains in their auditory discrimination abilities.

Recommendations

To teachers for teaching. As a result of this study, it is recommended that teachers develop a training program in the area of auditory discrimination. If time does not permit the teacher to develop a personal program, a sincere effort should be made to acquire a sequential program. These are available through most basal readers and most reading specialists.

It is further recommended that the teacher spend as much time as is needed to develop the desirable auditory discrimination skills. If the teacher has a collection of activities close at hand, many opportunities to use them will be available. Should the teacher find the class ready two

or three minutes early for recess or lunch, this time can be made valuable by selecting a quick auditory discrimination activity. Time spent waiting in line can also be used for auditory discrimination activities. It is recommended that incidental teaching, such as just described, be used in addition to scheduled training sessions.

For further research. As a result of this study it is recommended that further research be done in the following areas: (1) What advantage could be made of an auditory discrimination training program on the kindergarten level? (2) Reading specialists recommend that auditory discrimination training be conducted in the primary grades. Yet, some children go past this point without the badly needed auditory discrimination skills. What benefits could older children reap from a training program in auditory discrimination designed for their particular age group? (3) As stated before, this study was a descriptive study. There were no control groups. What would be the results of a study which used a control group and an experimental group?

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BIBLIOGRAPHY

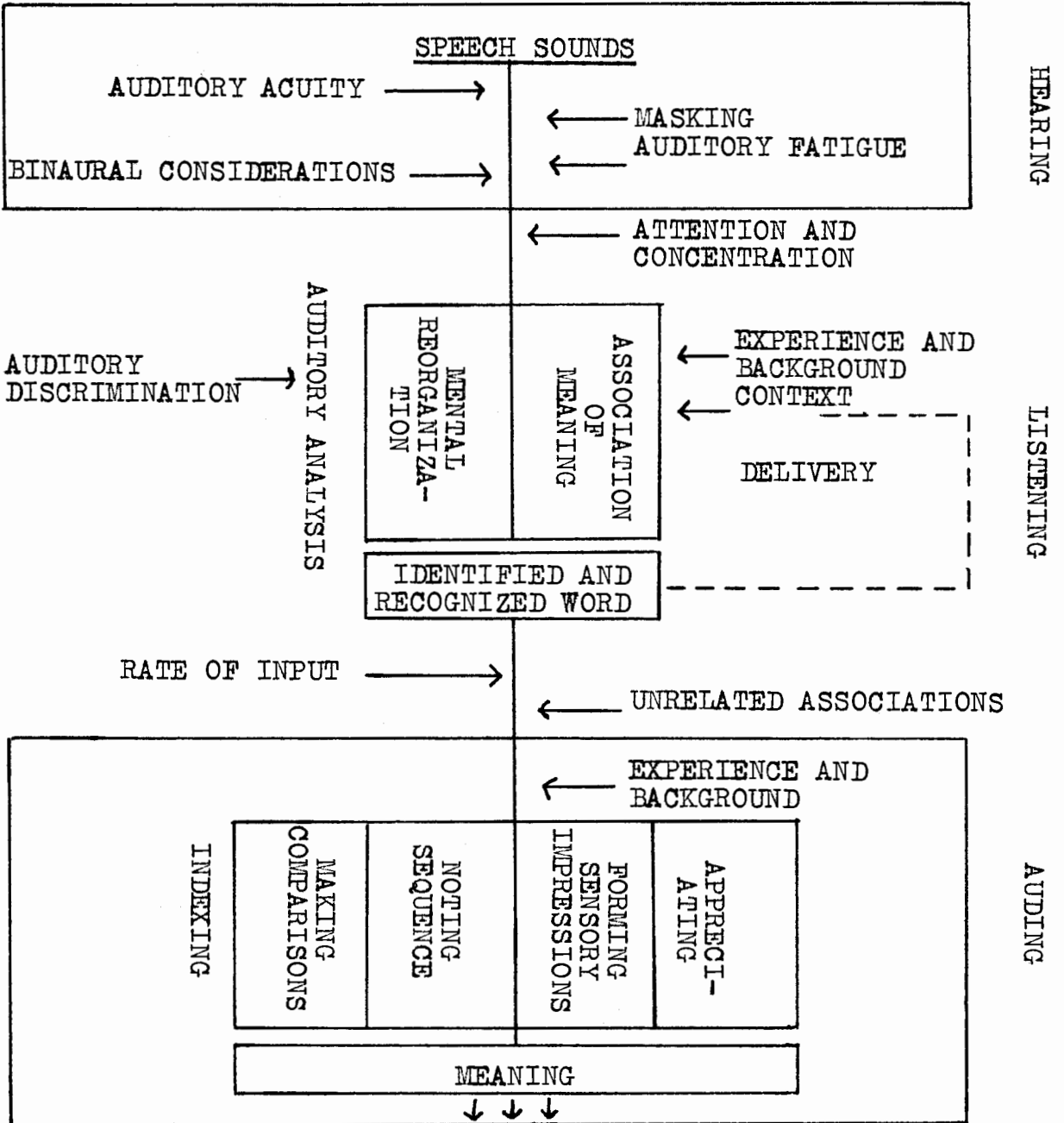
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APPENDIX

APPENDIX A

RELATIONSHIP OF HEARING, LISTENING AND AUDING



Test One • THE McKEE INVENTORY OF PHONETIC SKILL

NOTE: This key is a duplicate of the pupil's test with the correct answers indicated on it.

NAME _____ DATE _____

- | | | | | | | | | | |
|---------|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|-------------|
| 1. dog | <u>hog</u> | fog | log | bog | 11. those | rose | hose | pose | <u>nose</u> |
| 2. take | bake | <u>wake</u> | lake | rake | 12. hear | near | fear | <u>year</u> | dear |
| 3. jump | hump | pump | <u>bump</u> | dump | 13. fast | past | <u>last</u> | cast | mast |
| 4. hold | sold | fold | told | <u>gold</u> | 14. tip | <u>whip</u> | ship | lip | rip |
| 5. came | game | name | same | <u>tame</u> | 15. gave | <u>save</u> | wave | cave | rave |
| 6. mine | dine | nine | <u>fine</u> | line | 16. may | bay | <u>pay</u> | hay | gay |
| 7. big | wig | <u>dig</u> | rig | fig | 17. but | hut | cut | <u>shut</u> | rut |
| 8. will | <u>mill</u> | kill | hill | fill | 18. saw | law | raw | paw | <u>jaw</u> |
| 9. that | <u>cat</u> | rat | hat | bat | 19. trick | sick | pick | lick | <u>kick</u> |
| 10. my | cry | <u>thy</u> | try | shy | 20. went | sent | bent | <u>rent</u> | dent |

- | | | | | | | | | | |
|-----------|-------|-------|--------------|--------------|-----------|--------------|--------------|------|------|
| 21. black | track | crack | <u>stack</u> | tack | 25. win | shin | <u>thin</u> | pin | tin |
| 22. cap | sap | rap | tap | <u>strap</u> | 26. stop | <u>crop</u> | top | shop | mop |
| 23. hot | shot | trot | lot | <u>blot</u> | 27. thing | <u>cling</u> | sting | wing | sing |
| 24. mine | shine | whine | <u>vine</u> | pine | 28. just | crust | <u>trust</u> | rust | dust |

- | | | | | | | | | | |
|---------|------------|------------|------------|------------|----------|-------------|-------------|-------------|-------------|
| 29. wet | wed | <u>web</u> | west | well | 35. bed | beg | bet | <u>bell</u> | best |
| 30. sat | <u>sag</u> | sap | sad | sash | 36. him | hit | hid | hill | <u>hip</u> |
| 31. ran | <u>rat</u> | ram | rap | rag | 37. man | map | mat | mad | <u>mash</u> |
| 32. big | bin | <u>bid</u> | bib | bit | 38. time | tile | tide | <u>tire</u> | tine |
| 33. had | hat | hash | <u>ham</u> | hag | 39. fish | fin | <u>fist</u> | fit | fill |
| 34. but | bud | bust | bug | <u>bun</u> | 40. bag | <u>bath</u> | ban | bat | bad |

- | | | | | | | | |
|-----------|--------------|----------------|---------|------------|---------|------------------|----------------|
| 41. guess | guessing | <u>guessed</u> | guesses | 43. belong | belongs | <u>belonging</u> | belonged |
| 42. own | <u>owned</u> | owning | owns | 44. parade | parades | parading | <u>paraded</u> |

Test One • THE MCKEE INVENTORY OF PHONETIC SKILL

For First Grade and Beginning of Second Grade

PURPOSE

The single-sheet pupil tests enclosed in this package are intended as an aid to the busy teacher in diagnosing pupil mastery of the phonetic elements that are taught in the first-grade program of the McKee Reading for Meaning Series. Their use will enable the teacher to identify quickly those phonetic elements with which one or more pupils may be having difficulty, so that appropriate reteaching may be undertaken. Since diagnosis is the sole aim — not a comparison of achievement — norms would be of no real value, and they have consequently not been provided.

The various phonetic elements are tested in the order in which they have been taught in the series. Section A — rows 1-20 — tests those beginning consonant-sound associations that are taught in the preprimers and primer, and may be used by itself upon completion of the primer. Section B — rows 21-28 — tests the beginning consonant sounds that are introduced in *Up and Away*, the first reader. Section C — rows 29-40 — tests the pupil's ability to use consonant-sound associations when the consonant element comes at the end of the word. Section D — rows 41-44 — tests the four structural elements that are taught in the first reader.

The first word in each numbered row is one which, at the time of testing, has already been taught as part of the basal vocabulary of the McKee series. The other words in each row are words which are not as yet in the basal vocabulary, but which are identical with the first word except for the substitution of the phonetic elements being tested.

Only section A should be used when testing after completion of the primer. The entire test should be used when testing after completion of the first reader, whether at the end of first grade or the beginning of second grade. After testing, individual pupils may be given special help on those elements with which they obviously have difficulty. The McKee readers, manuals, and workbooks provide many exercises and suggestions for doing any necessary reteaching.

HOW TO ADMINISTER

Section A — Initial Consonant Sounds

Here is the first row of section A:

dog hog fog log bog

Say to the pupils: Listen for the sound that you hear at the beginning of *hate* and *hurt*. Now look at the words in row number 1. Find a word that begins with the same sound as *hate* and *hurt*. Draw a line under that word.

Proceed in the same manner with each row in section A. Following are suggested words to use in identifying the element being tested in each row:

h—hate, hurt
w—went, will
b—band, book

4. g—gate, gift
5. t—test, tail
6. f—fence, farm

7. d—dark, done
8. m—meat, mark
9. c(hard)—cage, card
10. th—them, they
11. n—nut, nap
12. y—yard, yell
13. l—load, leap

24. wh—what, where
15. s—salt, seat
16. p—pine, post
17. sh—shop, shell
18. j—jam, jail
19. k—kept, key
20. r—rain, road

Section B — Initial Consonant Sounds

Use exactly the same procedure as for section A. Following are suggested words to use:

21. st—storm, store
22. str—streak, strain
23. bl—blank, blow
24. v—view, voice

25. th—thank, thought
26. cr—crowd, crime
27. cl—clean, class
28. tr—trap, tree

Section C — Final Consonant Sounds

Here is the first row of section C:

29. wet wed web west well

Say to the pupils: Listen for the sound that you hear at the end of *knob* and *crab*. Now look at the words in row number 29. Find a word that ends with the same sound as *knob* and *crab*. Draw a line under that word.

Proceed in the same manner with each row in section C. Following are suggested words to use:

29. b—knob, crab
30. g—bug, fog
31. t—dot, hut
32. d—mad, rod
33. m—him, Tom
34. n—fan, grin

35. ll—doll, kill
36. p—mop, nap
37. sh—fish, push
38. r—care, store
39. st—post, nest
40. th—moth, tooth

Section D — Structural Elements

Here is the first row of section D:

41. guess guessing guessed guesses

Say to the pupils: Look at the first word in row number 41. You know that word. It is *guess*. The three other words in the row are made from the word *guess*. Find the one that has the same sound at the end that you hear at the end of the words *milked* and *helped*. Draw a line under that word.

Proceed in the same manner with each row in section D. Following are suggested words to use:

41. ed(t)—milked, helped
42. ed(d)—called, played
43. ing—jumping, eating
44. ed(ed)—wanted, painted

CORRECTING THE TESTS

On the reverse side is a key to help you correct your pupils' tests. The dotted lines on this key will show you that the correct answers follow a regular design which should make it easy for you to correct each test quickly.