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ABSTRACT

This study examines the relationships between reading comprehension and listening comprehension among second graders with regard to age, reading ability, and intelligence. One form of the Gates-MacGinitie Reading Test was administered to 66 second graders to measure reading comprehension and a revised alternate form of the same test measured listening comprehension. To determine modality preference, reading and listening scores were compared for the highest and lowest thirds in reading and again for the highest and lowest thirds in intelligence. The most dramatic difference between reading and listening was found when the reading and listening scores were compared for the lowest third in reading ability and the lowest third in intelligence. In both cases, subjects scored significantly higher on the listening comprehension test. In the highest thirds in intelligence and reading ability, no significant difference was found between modalities. These results suggest a need for auditory learning activities for those scoring low in reading or in intelligence. (SW)

RELATIONSHIPS BETWEEN LISTENING COMPREHENSION AND READING COMPREHENSION AMONG SECOND-GRADERS

A THESIS

SUBMITTED TO THE FACULTY

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CHAPTER I

THE PROBLEM

Listening and reading are widely accepted as receptive communication skills, both involving comprehension, interpretation, and evaluation. Many studies have been conducted concerning the relationship between listening and reading. Most of the correlational studies between listening and reading, however, have been conducted in the middle and upper elementary grades.

Superiority of one mode of presentation over the other has long been a topic for exploration. Robinson (1972) and other investigators in the literature have dealt with modalities in beginning reading methods. Such studies have often used methods such as the whole word approach which depends on accurate visual perception and compared it with the phonic approach which depends heavily on auditory discrimination. Many feel it would be difficult to find one approach for teaching that would eliminate either the visual or the auditory mode completely. It has generally been concluded that a combination of visual and auditory presentation of materials leads to more efficient comprehension than either a purely auditory

or purely visual presentation of materials.

However, certain variables concerning the subjects often affected the results of modality studies. In 1894, Kilpatrick found that an auditory presentation of nouns was superior for young children while older children preferred the visual mode. This generalization that the aural mode is preferred by younger children and that preference for visual mode increases with age has been upheld in the research (Bonner, 1960; Durrell, 1969; Many, 1965; Taylor, 1964).

Both Duker (1965) and Jones (1972) reported on an analysis by Day and Beach of 34 studies of modes of learning. It was found that the greater the intelligence of the receiver, the greater the advantage of the visual presentation, and the greater the reading ability of the receiver, the greater the advantage of the visual presentation. Many investigators have also explored the possibility that listening comprehension may be a valid predictor of reading capacity.

As was pointed out by Jones (1971), very few studies have made an effort to determine the role of individual modal preferences in learning to read. Most studies have dealt with learning lists of words or nonsense syllables. This is the easiest method to use; however, it becomes very hard for results of these types of studies to

be compared to the reading process. Jones (1971) suggested that more experimentation is needed in the area of modal preference and its specific relationship to reading.

Statement of the Problem

It was the purpose of this study to explore the relationships that exist between reading and listening in second grade. The following questions were considered:

1. What is the relationship between listening and reading test results?
2. What is the most effective mode for comprehension by below-average readers?
3. What is the relationship between reading comprehension and intelligence?
4. What is the relationship between listening comprehension and intelligence?

Importance of the Study

There has been very limited research involving listening and reading comprehension at the second-grade level. There has also been very limited research in the testing of modal preference and its relationship to reading comprehension. This study deals specifically with these topics.

Duker (1965) reported on studies by Biggins (1961) and Watkins (1961) concerning listening and reading

comprehension at the second-grade level. This author feels that both studies had definite limitations. Biggins (1961) used as a measure of listening comprehension an unpublished test called the Evan L. Wright Listening Test and Watkins (1960) used My Weekly Reader. Both investigators used the California Reading Test as a measure of reading comprehension and compared the results with their respective listening measures. This writer feels that it is very difficult to make an accurate comparison in this manner since the format of the California Reading Test would differ greatly from the format of the Wright or Weekly Reader listening tests. A more serious drawback to both studies involves the lack of standardization of the listening measures.

Using the same procedure, but refining it more, the present study attempted to compare listening comprehension and reading comprehension in second grade by using alternate forms of the same test--a well-known and standardized test. In one form, visual input was tested while the other form utilized aural input. In this way, listening and reading were compared on the most equal basis possible.

It has already been suggested that listening ability may be a better indicator of reading ability than mental age (Barbe & Carr, 1957). Listening ability is closely

linked with the given definition of reading capacity by Betts (1950, p. 439). A listening measure can help to establish the ability of the subject to deal with language. Measures of mental age often involve abilities that have very little to do with reading. Measurement of mental age is also very often time-consuming, individualized, and can require special training. It seems more reasonable to measure listening ability to help indicate possible reading potential than to measure mental age.

Exploring the relationships among listening, reading, and intelligence may help us discover the reading potential of a child. Once the poor readers with potential are identified, the most effective mode of presentation must be employed for learning. For children having difficulty in learning to read, Wepman (1971) holds that attacking their reading problems through their strongest modality should increase their chances of learning. This author attempted to identify the strongest modality not only of the group as a whole, but of the low-ability readers in the group.

It has been suggested that listening or an auditory presentation is the best mode for below-average readers (Swalm, 1972); however, only a small number of studies have made the distinction between good and poor readers in this type of research. Ross (1964) conducted a study of

good and poor readers in fifth, sixth, and seventh grades and reported correlations between listening and reading and listening and intelligence. A major shortcoming of Ross's study observed by the investigator was that no breakdown of good and poor readers was reported.

In a highly controlled study by Cooper (1971) of learning modality differences of good and poor first-grade readers, no single mode was found to be superior for either group. Cooper also stated in the study that due to the highly controlled conditions, the results of his study could not easily be generalized to the classroom. Bursuk's study (1971) of below-average tenth-grade readers used a visual approach and a combined aural-visual approach, but made no comparison of just aural approach and just visual approach. Arthur E. Traxler, in a discussion of Barbe and Carr (1957), suggested that further studies on the relationship between listening comprehension scores and reading comprehension scores on different grade levels were needed.

In light of the very limited studies in this area, the present study attempted to investigate the relationships between listening and reading with regard to reading ability. In this way, perhaps a method of identifying poor readers with potential as well as identifying the most meaningful mode of presentation for poor readers might be explored further.

Definitions of Terms

Listening. For the purposes of this study is the hearing and comprehension of sounds.

Reading. For the purposes of this study involves visual contact and comprehension of written materials.

Intelligence. Intelligence in this study comprises those abilities measured by the California Short-Form Test of Mental Maturity, 1963-S, Level 1. These include Opposites, Similarities, Analogies, Numerial Values, Number Problems, Verbal Comprehension, and Delayed Recall.

Modality or Mode. Refers to the sensory pathway through which children learn (Robinson, 1972).

Auditory Modality or Auditory Mode. A process of learning that uses primarily the sense of hearing (Cooper, 1971).

Visual Modality or Visual Mode. A process of learning that uses primarily the sense of sight (Cooper, 1971).

Modal Preference. That mode preferred by an individual or the majority of a group, as indicated by task performance (Jones, 1972).

Reading Capacity. The highest reading level at which the individual can comprehend (i.e., deal adequately with the facts by means of oral language) material that is read to him (Betts, 1950, p. 439).

CHAPTER II

REVIEW OF THE LITERATURE

It is generally accepted that listening and reading are both aspects of communication that deal with meaningful association with symbols. Studies have been conducted to compare the two and also to establish superiority of one over the other as a mode of learning. While results of correlational studies all seem to fall within a specified range, studies of modal preference are often contradictory. It seems that factors such as age, intelligence, and reading ability are important variables in such studies.

Some Relationships Between Listening and Reading

Most of the correlational studies between listening and reading have been conducted in the middle elementary grades. Duker (1965) reported on 14 major studies in grades 2 through 7 and found that coefficients of correlation ranged from .45 to .70.

There were only two studies conducted at the second-grade level. A study by Biggins (1961) compared reading, listening, and intelligence test results of 124

second- and third-grade subjects. The tests used were the California Reading Test, the California Mental Maturity Test, and an unpublished test called the Evan L. Wright Listening Test. The reported coefficients between listening and reading were .45 for second grade and .70 for third grade. Watkins (1960) tested 250 second-grade children and reported a correlation coefficient of .46 between listening and reading.

The majority of research was concentrated in grades 4, 5, and 6. In a study involving 140 fourth-grade children, Joney (1956) reported a correlation coefficient of .65 between listening and reading. In 1960, Bonner tested 282 fourth-, fifth-, and sixth-grade pupils using the STEP for listening comprehension and the Stanford Achievement Tests, Form L, for reading comprehension. Coefficients of correlation between listening and reading were reported as .57 at the fourth-grade level, .66 at the fifth-grade level, and .53 at the sixth-grade level. In another study at the same grade levels, Cleland and Toussaint (1962) tested 172 pupils using the STEP and the Gates Reading Survey. The reported coefficient of correlation for all three grades was .67.

Many (1965) reported a correlation of .68 between listening and reading scores of 352 sixth-graders. A study by Brown (1965) yielded even higher correlations.

Brown reported coefficients of .82, .76, and .78 at the fourth-, fifth-, and sixth-grade levels, respectively.

In a study of good and poor readers in fifth, sixth, and seventh grades, Ross (1964) reported the correlation between listening and reading to be .74. At the ninth-grade level, Kuthy (1969) tested 420 subjects and the result was a correlation of .77.

Some Relationships Between Listening and Intelligence

Some of the aforementioned studies also reported correlations between listening and intelligence. In the aforementioned second-grade studies, Biggins (1961) reported a correlation of .69 and Watkins (1960) reported .43 between listening and intelligence. Biggins (1961) also reported a correlation coefficient of .75 for third-grade subjects. Joney (1956) reported a correlation coefficient of .44 between listening and intelligence in fourth-grade subjects. In Bonner's study (1960), results of the STEP and the Pintner General Ability Test, Non-Language Series, yielded coefficients of correlation of .59 at the fourth-grade level, .42 at the fifth-grade level, and .38 at the sixth-grade level. At the same grade levels, Cleland and Toussaint (1962) reported a correlation of .61 between listening as measured by the STEP and intelligence as measured by the Stanford-Binet

and the SRA Primary Mental Abilities Test.

Ross (1964) also used the STEP for a listening measure and compared it with the results of the California Short-Form Test of Mental Maturity. The coefficient of correlation yielded was .51 for the fifth-, sixth-, and seventh-graders tested. Brown (1965) once again reported higher correlations with coefficients of .76, .69, and .76 at the fourth-, fifth-, and sixth-grade levels, respectively.

Mode of Presentation

Much has been written concerning modes of learning, and much of the research has been either inconclusive or inconsistent. One reason for the inconsistencies is the number of variables that enter into these studies. The variables often concern the learner, not the mode of presentation. The aforementioned analysis by Day and Beach (Duker, 1965; Jones, 1972) made 11 generalizations after reviewing 34 studies of modes of learning. Among them were three concerning age, intelligence, and reading ability:

1. The auditory mode is preferred by 6-year-olds with a gradual transition to preference for the visual mode with increase in chronological age.

2. The greater the intelligence of the receiver, the greater the preference for visual mode.

3. The greater the reading ability of the receiver, the greater the preference for visual mode.

Age of the Learner. There seems to be an agreement that in primary and lower intermediate grades listening comprehension is superior to reading comprehension (Durrell, 1969; Hawkins, 1897; Joney, 1956; Taylor, 1964).

In a study of 56 second-grade readers (Budoff & Quinlan, 1964), meaningful paired-associates were presented visually and orally. The oral presentation produced more rapid learning. Durrell (1969) found that listening vocabulary is one year above reading vocabulary in second grade, while no difference was found in eighth grade. In a study by Robinson (1972) of 448 subjects from first grade to third grade, neither method for teaching reading was found better than the other. However, auditory discrimination made a significant contribution to all reading while visual did not.

The gradual transition from aural mode to visual mode seems to begin around the sixth grade. Joney (1956) found listening superior to reading in his study of 140 fourth-grade subjects. Bonner (1960) found a negative correlation between listening and chronological age when he studied fourth-, fifth-, and sixth-graders. Many (1965) reported that subjects at the sixth-grade level comprehended better through the visual mode than the aural mode,

and although listening comprehension is superior to reading comprehension in the primary and lower intermediate grades, Durrell (1969) reported that from the sixth grade on, scores on reading paragraphs were higher. In a study of 515 pupils in grades 4, 5, and 6, Brassard (1970), however, found listening comprehension statistically superior throughout all the grades. Williams and Williams (1972) reported inconclusive results in their study of auditory and visual presentation of materials to 96 fourth- and sixth-grade subjects. By the time pupils reach high school and college age, visual materials are superior to auditory materials (Hawkins, 1897).

Intelligence of the Learner. Concerning mode of presentation and intelligence, Day and Beach (Duker, 1965; Jones, 1972) found that the greater the intelligence of the receiver, the greater the preference for visual presentation. Smith (1959) studied 180 sixth-grade subjects using the California Test of Mental Maturity and the McCall-Crabbs Standard Test Lessons in Reading. It was reported that the High IQ-High Reading group had significantly higher comprehension by reading than by listening or a combination of listening and reading.

In a study of 515 fourth-, fifth-, and sixth-grade subjects, however, Brassard (1970) reported that subjects with IQ's above 110 showed very little difference between

listening and reading. In the same study, those subjects with reported IQ's below 110 were superior in listening.

Reading Ability of the Learner. In the studies reviewed by Day and Beach (Duker, 1965; Jones, 1972), it was generalized that the reading ability of the learner affects the mode of presentation that is preferred. The greater the reading ability, the greater the preference for visual mode.

Swalm (1972) tested 324 second-, third-, and fourth-grade subjects in oral reading, silent reading, and listening. When analyzed according to reading abilities, it was reported that the trend was for above-average students to comprehend better when reading. The average students followed the same pattern, although differences were not as significant. For the below-average readers, listening became the most preferred mode. Emslie, Kelleher, and Leonard (1954) also found listening comprehension slightly higher for poor readers.

Bursuk (1971) tested 132 tenth-grade subjects of average intelligence but below-average reading levels. Bursuk used a visual approach and combined aural-visual approach. The combined approach was found to be more effective than the visual approach in improving the reading comprehension of the subjects.

Cooper (1971) attempted to study the differences

in learning modalities of good and poor first-grade readers. Cooper taught nonsense syllables using four modalities--visual, auditory, kinesthetic, and a combination of all three. No single mode was found to be superior for either group of readers. Cooper found modality to be a completely individual matter.

Listening, Intelligence, and Reading Capacity of the Learner

There is some question as to whether or not listening comprehension is a valid predictor of the reading ability of a child. Many investigators have considered this and made mention of this possibility.

Spache (1969) holds that "the measurement of reading capacity through auditory comprehension is still in its infancy, but it holds distinct promise of contributing to improved prediction of reading capacity [p. 20]." In 1953, Armstrong investigated the visual and auditory vocabularies of 200 children, ages 6 to 12, and implied that a child's auditory vocabulary may indicate potential improvement in reading ability. Duker (1965) has cited studies supporting the theory that listening tests can be used as a tool in predicting reading potential.

In a study mentioned earlier by Cleland and Toussaint (1962), it was noted by the authors that a combined action of the STEP and the SRA Primary Mental Abilities

(one of two intelligence tests used in the study) "yielded a higher estimate of reading potential than any other combination of two selected measures [p. 230]." Barbe and Carr (1957) point up the need for a measure of reading potential that can be administered by a classroom teacher and suggest that listening comprehension provides the best possible means.

Effects of Listening Training on Reading

As mentioned earlier, Wepman (1971) felt that there was some value in attacking a child's reading problems through his strongest modality. Robinson's long-range study (1972) suggested that there is possible value of individual work in auditory or visual methods, but large-scale programs were not recommended.

Some investigators do feel that when certain skills are improved in listening, these same skills improve in reading (Bracken, 1971). Bracken cited two studies by Kelty and Lewis. Kelty (1951) conducted a study involving 188 fourth-grade subjects. The subjects were placed in two groups and the experimental group had lessons in listening for specific purposes. The purposes were finding the main idea, finding supporting details, and drawing conclusions. Kelty concluded that the practice in listening favorably affected the ability of the

fourth-grade subjects to read for those same purposes. In a similar study by Lewis (1951), 357 sixth-grade subjects were trained in listening for specific purposes and improved their reading for those same purposes.

Summary

The research seems to indicate that relationships do exist between listening and reading and listening and intelligence. Correlational studies at various grade levels using various tests of listening and reading reported coefficients ranging from .45 to .82. The mean coefficient of the studies reviewed by the investigator was .65.

Most of these studies were conducted in the middle elementary grades. There were only two studies reported on in the second grade and the correlations reported, .45 and .46, were the lowest in the literature. The one study in the third grade reported a coefficient of .70. The three fourth-grade level studies had coefficients of .57, .65, and .82. The studies conducted on the fifth-grade level reported correlation coefficients of .66 and .76; on the sixth-grade level, .53, .68, and .78. The one study conducted on the ninth-grade level reported a correlation coefficient of .77 between listening and reading.

The correlation coefficients between listening and intelligence ranged from .38 to .76. The reviewed studies

used various tests of listening and intelligence and the grade levels that were tested ranged from primary through seventh. The mean coefficient of these studies was .59.

The two studies in the second grade reported correlation coefficients of .69 and .43; one study in the third grade reported a correlation of .75. The three fourth-grade level studies had correlation coefficients of .44, .59, and .76. The studies conducted on the fifth-grade level reported correlation coefficients of .42 and .69 between listening and intelligence, and on the sixth-grade level, .38 and .76 were the reported coefficients.

Certain trends in modes of presentation were found. In primary and lower intermediate grades, listening comprehension seems to be superior to reading comprehension. As the age of the subject increases, the preference for auditory mode decreases. In general, the higher the intelligence of the learner, the greater the preference for visual mode. It also seems that the lower the reading ability of the learner, the greater the preference for auditory mode. High-reading-ability learners do equally well in both situations or show a preference for visual mode.

It has been suggested by many investigators that listening comprehension may be a valid predictor of the potential reading ability of a child.

The literature has suggested that when certain skills are improved in listening, these same skills are improved in reading. Hence, there may be value in attacking problems of remedial readers through the aural mode.

CHAPTER III

PROCEDURE

In order to test listening comprehension and reading comprehension, two forms of the Gates-MacGinitie Reading Tests, Primary B, were administered to 66 second-grade subjects. The California Short-Form Test of Mental Maturity had been administered to the same 66 subjects previous to this testing. This chapter contains a description of the population, the tests and their administration, and the rationale for using the Gates-MacGinitie Reading Test, Primary B. Treatment of the data is also described.

Population

The subjects consisted of 66 second-grade pupils in a public elementary school in Belleville, New Jersey. There were 39 girls and 27 boys involved in the study. Belleville is a suburban community located directly north of Newark, New Jersey. The population, according to the 1970 census, is 37,629, and the average yearly family income is $12,148.

No subject was included who had an uncorrected deficiency in aural or visual acuity as shown by a recent school examination. No subject was included who had not

received the California Short-Form Test of Mental Maturity earlier in the year.

Description of the Tests

The tests used in this study were the two forms of the Gates-MacGinitie Reading Test, Primary B, by A. I. Gates and W. H. MacGinitie (1965) and the California Short-Form Test of Mental Maturity, Level 1, devised by E. T. Sullivan, W. W. Clark, and E. W. Tiegs (1963).

The Gates-MacGinitie Reading Test. The Comprehension Test of the Gates-MacGinitie is a 34-item subtest with passages of increasing length and difficulty. Each item is accompanied by four pictures which serve as answer choices and the child marks the picture which best illustrates the passage or answers the question asked. The Gates-MacGinitie has two forms. Form 2 was used by the investigator to measure reading comprehension in this study. A copy of the Gates-MacGinitie Reading Test, Primary B, Form 2, can be found in Appendix A.

Form 1 of this same test was slightly altered in order to measure listening comprehension. All written material was deleted and only the answer panels appeared in the test booklet. Since these answer panels were in pictorial form, no reading was required. The Listening Comprehension test can be found in Appendix A.

The directions for administering the test are

clear. Scoring keys are provided. The Gates-MacGinitie also includes a Vocabulary test which was not included at all in this study. Separate norms were provided for the Comprehension and Vocabulary tests. These tables yielded Standard Scores, Percentiles, and Grade Scores.

Norms for the Gates-MacGinitie Reading Tests were developed after administering the tests to 40,000 subjects in 38 communities in 1965. The communities were chosen on the basis of size, location, average education level, and family income. No further specifics concerning the sample tested were provided in the Technical Manual accompanying the test.

The alternate form reliability coefficient was reported as .81 between Form 1 and Form 2 of the Comprehension Test. Split-half reliability was reported as .93. Although the alternate form reliability accounts for approximately 65% of the variance, that correlation coefficient was satisfactory for the purposes of this study.

In a review of the Gates-MacGinitie, Primary B, Burke (Buros, 1972) noted that the answers in the comprehension test sometimes were dependent on only one word. Van Roekel (Buros, 1972), however, found this revision to be an improvement, since some items involved inference and abstraction. Although he felt that the standardization was carefully done, Van Roekel also commented about the lack of description of the norming group.

The California Short-Form Test of Mental Maturity. This test, a revision of the 1957 edition, consists of seven test units grouped according to four factors--Logical Reasoning, Numerical Reasoning, Verbal Concepts, and Memory. The test consists entirely of picture items, arranged in ascending order of difficulty, each with a choice of three to five responses. Pupils mark their responses in the test booklet. The seven subtests are entitled Opposites, Similarities, Analogies, Numerical Values, Numerical Problems, Verbal Comprehension, and Delayed Recall. Directions and, in some cases, test items are all presented orally by the examiner. Total testing time is 41 minutes; however, introductory instructions, answering questions, working through sample items, and administration of test materials require additional time.

The sample used during the norming and scaling of the 1963 revision consisted of 38,793 cases from schools representing seven geographic regions of the United States. The Total IQ Score yielded by this test was the score used by the investigator in this study. A copy of this test is provided in Appendix A.

Rationale for Using the Gates-MacGinitie

The Gates-MacGinitie was used in this study because the author felt that a well-known, standardized test on which there was published information was needed in this

type of research.

The alternate forms provided a convenient measure of both aural and visual comprehension within the same test. Pictorial options as answers also proved advantageous.

The 34 paragraphs provided a test that could be read by the subject or read to the subject, thereby comparing reading comprehension and listening comprehension. Another advantage of the Gates-MacGinitie was the good reliability of the alternate forms of the test, thereby assuring reliable test results.

For these reasons it was felt that the Gates-MacGinitie Reading Test would yield the most accurate results in this type of study.

Administration of the Tests

The investigator administered the revised Listening Comprehension test to three groups of second-graders on the morning of May 18, 1973. Each item consisted of a short selection which was read to the pupils and accompanied by four pictorial options, one of which was the correct answer. For purposes of clarity, the pictures were projected on a screen while the material was being read.

Each item was read to the subjects one time with a time span of 15 seconds between the end of one item and

the beginning of the next. Administration of the 34-item Listening Comprehension test took approximately 30 minutes. A total of 45 minutes was allowed including directions and administration and collection of test materials.

The investigator followed the format of the directions for Administration of the Reading Comprehension subtest found in the Teacher's Manual and made the necessary changes in wording. The revised format used in administering the Listening Comprehension test can be found in Appendix B.

The investigator administered the 34-item Reading Comprehension subtest of the Gates-MacGinitie to the same three groups of second-graders on the afternoon of May 18, 1973. Directions and time limits in the Manual were followed and each administration again took approximately 45 minutes.

The California Short-Form Test of Mental Maturity was administered to the three second-grade classes on February 13, 1973, by their classroom teachers, the investigator being one of them. Standardized procedures were followed as set down in the Examiner's Manual.

Treatment of the Data

Raw scores on the Reading Comprehension test and the Listening Comprehension test were totaled, and the mean and standard deviations were computed in order to

examine relationships.

Means and standard deviations for both tests were computed for the highest third and the lowest third in reading ability to examine relationships.

Means and standard deviations for both tests were computed for the highest third and the lowest third of the sample in intelligence to examine relationships.

The Pearson product-moment coefficient of correlation was used to find the extent and direction of the relationship between listening and reading, between listening and intelligence, and between reading and intelligence as measured by these tests. The raw score formula used in the computations was the following (Brown, 1970, p. 22):

$$r = \frac{\Sigma XY/n - (\bar{X}\bar{Y})}{s_x s_y}$$

Since a single group of subjects was studied under two separate conditions, the difference method of computing t was the appropriate statistic. The t test was computed on the Instructional Computing Cooperative Madison 2000C System from the data gathered.

CHAPTER IV

FINDINGS AND DISCUSSION

Total auditory and visual comprehension scores for all subjects were compared as well as auditory and visual comprehension scores of the highest third of the sample and the lowest third of the sample in regard to reading ability. Auditory and visual comprehension scores were also compared in the highest and lowest thirds of the sample based on intelligence scores.

Listening and reading scores were correlated as well as intelligence and listening and intelligence and reading scores.

Correlational Studies

Table 1 summarizes the relationships among listening, reading, and intelligence. The findings indicate significant relationships at the .01 level among all three areas for an N of 66. The coefficient of correlation was .45 between reading and listening, .38 between listening and intelligence, and .46 between reading and intelligence.

Comparison of Reading and Listening

As summarized in Table 2, the difference between reading and listening scores was significant at the .01

TABLE 1

CORRELATIONS BETWEEN READING TEST SCORES, LISTENING TEST SCORES, AND INTELLIGENCE ON THE SECOND-GRADE LEVEL (N = 66)

Variable	1	2	3
1. Reading Comprehension		.45	.46
2. Listening Comprehension	.45		.38
3. Intelligence	.46	.38	

TABLE 2

SCORES OBTAINED FROM ADMINISTRATION OF READING AND LISTENING COMPREHENSION TESTS AND INTELLIGENCE TEST ON THE SECOND-GRADE LEVEL (N = 66)

Test	Range	Mean	S.D.
Reading	13-34	27.06	5.48
Listening	23-34	31.36	2.02
Intelligence	86-134	111.58	8.98

level of confidence. The mean for all reading scores was 27.06 with a standard deviation of 5.48; the mean for the listening scores was 31.36 with a standard deviation of 2.02. Reading scores ranged from 13 to 34 and listening scores ranged from 23 to 34.

With 65 degrees of freedom, the value of *t* required to be significant at the .01 level is 2.648. The *t* value secured in comparing the differences between the means was 7.113. Therefore, the difference was significant at the .01 level of confidence.

Comparison of Reading and Listening by Reading Ability

The Gates-MacGinitie Reading Test, Primary B, was used to identify the highest and lowest thirds of the sample in reading ability. Table 3 shows the means and standard deviations of the reading and listening scores for both groups.

The highest third in reading had a mean reading score of 32.55 with a standard deviation of .96 and a mean listening score of 32.09 with a standard deviation of 1.57. The lowest third had a mean reading score of 20.64 with a standard deviation of 3.61 and a mean listening score of 30.64 with a standard deviation of 2.40.

With 21 degrees of freedom, 2.831 is the value of *t* required for significance at the .01 level. The *t* value

TABLE 3

READING AND LISTENING SCORES OF THE HIGHEST THIRD IN READING ABILITY AND THE LOWEST THIRD IN READING ABILITY ON THE SECOND-GRADE LEVEL (N = 22)

Reading ability	Reading		Listening	
	Mean	S.D.	Mean	S.D.
Highest third	32.55	.96	32.09	1.57
Lowest third	20.64	3.61	30.64	2.40

TABLE 4

READING AND LISTENING SCORES OF THE HIGHEST THIRD IN INTELLIGENCE AND THE LOWEST THIRD IN INTELLIGENCE ON THE SECOND-GRADE LEVEL (N = 22)

Intelligence	Reading		Listening	
	Mean	S.D.	Mean	S.D.
Highest third	29.32	4.83	31.91	1.38
Lowest third	23.68	5.90	30.73	2.53

secured in comparing the differences between means of the highest third in reading ability was 1.389. This difference was not significant.

The t value secured in comparing the differences between means of the lowest third in reading ability was 14.624. This difference was significant at the .01 level of confidence.

Comparison of Reading and Listening by Intelligence

The sample was ranked in order of intelligence and the means and standard deviations of reading and listening scores were computed for the highest third and the lowest third of the sample. Table 4 summarizes these data.

The highest third in intelligence had a mean reading score of 29.32 with a standard deviation of 4.83 and a mean listening score of 31.91 with a standard deviation of 1.38. The lowest third had a mean reading score of 23.68 with a standard deviation of 5.90 and a mean listening score of 30.73 with a standard deviation of 2.53.

With 21 degrees of freedom, 2.831 is the value of t required for significance at the .01 level. The t value secured in comparing the differences between means of the highest third in intelligence was 2.800. The difference was not significant at the .01 level.

The t value secured in comparing the differences

between means of the lowest third in intelligence was 6.196. This difference was significant at the .01 level of confidence.

Discussion

The coefficient of correlation between reading and listening for the entire sample was .45. This is consistent with results reported in other studies on the second-grade level, .45 (Biggins, 1961) and .46 (Watkins, 1960).

The correlation of .38 between listening and intelligence for the entire population was somewhat lower, but within the range of the previously reported studies. On the second-grade level, Biggins (1961) reported a correlation of .69 and Watkins (1960) reported a correlation of .43 between listening and intelligence.

The results of this study were in agreement with the greater proportion of the research in the area of modal preference. According to the studies reviewed, listening comprehension is significantly higher than reading comprehension at the primary level (Durrell, 1969; Hawkins, 1897; Joney, 1956; Taylor, 1964). Results of the reading and listening comprehension tests in this study indicated that this was the case for the second-graders tested. The difference was significant at the .01 level of confidence.

When the sample was ranked by intelligence, the highest third reported similar mean scores in reading and listening, 29.31 and 31.90, respectively. This difference was not significant. These results indicated that students with higher intelligence function equally well in listening and reading.

The lowest third of the sample in intelligence reflected a different picture. The mean scores in reading and listening of 23.68 and 30.73, respectively, indicated that students at these levels of intelligence function significantly better in listening than in reading. These results are in conformity with those of Brassard (1970). A need for auditory learning activities for children who test low in intelligence is indicated.

When comparisons were made according to reading ability, it was found that the highest third had no preference. They did equally well in reading and listening, with mean scores of 32.55 and 32.09, respectively. The difference was not significant.

This is not entirely in agreement with the literature; however, an explanation can be offered. The literature suggests that reading is superior to listening in high-ability readers. However, most of these studies have been conducted in the middle and upper elementary grades. This writer feels that the grade level of this study

affected the results. Since the subjects in this study were all second-graders, there may still be a tendency toward listening as a preferred mode, regardless of reading ability. This may then result in no preference between listening and reading for the highest third in reading ability. This preference for the auditory mode in the primary grades was reflected earlier in this section.

The lowest third in reading ability, however, definitely preferred listening over reading. This is in agreement with the findings of Day and Beach (Duker, 1965; Jones, 1972), Bursuk (1971), Emslie, Kelleher, and Leonard (1954), and Swalm (1972).

The low-ability reading group had mean scores in reading and listening of 20.64 and 30.64, respectively. The computed difference was significant at the .01 level. These results may indicate a need for more auditory learning activities for low-ability readers.

It is interesting to note the small difference in the listening scores for the highest and lowest third in reading ability, 32.09 and 30.64, respectively, as compared with the large difference in their reading scores, 32.55 and 20.64, respectively. The investigator is in agreement with Armstrong (1953), Barbe and Carr (1957), Duker (1965), and Spache (1969) that the listening ability of a poor reader may indicate a potential for improvement in reading.

A high intelligence score in addition to a high listening score may be an even stronger indication of reading potential.

Once the potential is recognized, a logical next step seems to be to attack the reading problem through the child's strongest modality as suggested by Wepman (1971). There have been reported studies in the literature that do support the idea of improving skills in listening to improve skills in reading (Bracken, 1971). Perhaps general learning may also be improved through exercises in the auditory modality.

It is important that each child be given the opportunity to work up to his potential. Exploring the relationships among a child's listening, reading, intelligence, and modal preferences can perhaps show us a way of identifying a poor reader while providing insight into the most meaningful way of attacking his learning problems.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study examined the relationships existing between listening comprehension and reading comprehension in the second grade. Modality preference on the second-grade level with regard to reading ability and intelligence was also explored.

Summary

Sixty-six second-grade subjects were administered one form of the Gates-MacGinitie Reading Test, Primary B, Comprehension subtest to measure reading comprehension, and a revised alternate form of the subtest to measure listening comprehension. No reading was required in the listening subtest. The same subjects had been previously administered the California Short-Form Test of Mental Maturity.

A search of the literature indicated a lack of correlational studies of this type on the second-grade level, and a lack of modality studies dealing specifically with reading comprehension and listening comprehension and ability groups.

The studies reviewed had indicated that relationships do exist between listening and reading and listening and intelligence. Correlational studies at various grade levels using different tests reported coefficients ranging from .45 to .82, with second-grade coefficients of .45 and .46. This study indicated a correlation coefficient of .45 between listening and reading. The correlation coefficients between listening and intelligence at various grade levels using different tests ranged from .38 to .76, with second-grade coefficients of .69 and .43. The results of this study indicated a correlation coefficient of .38 between listening and intelligence. A correlation of .46 was found between reading and intelligence. All correlation coefficients were found to be significant at the .01 level of confidence.

Certain trends in modes of learning were indicated in the literature. Listening comprehension was found to be superior to reading comprehension in the lower grades. The present study was consistent with these results. The mean and standard deviation for all reading comprehension scores were 27.06 and 5.48, respectively. The mean and standard deviation for all listening scores were 31.36 and 2.02, respectively. The difference between reading and listening was significant at the 1% level.

Previous research had indicated that intelligence

and reading ability also have an effect on modal preference. In general, the higher the intelligence or reading ability of the subject, the greater the preference for visual mode; the lower the intelligence or reading ability, the greater the preference for auditory mode. The present study was consistent with results of other studies concerning the lower levels in intelligence and reading ability. Pupils who scored low in reading and intelligence showed a significant preference for auditory mode. In the highest third in intelligence and reading ability, no significant difference was found between listening and reading at the 1% level.

Conclusions

The first problem investigated in this study was the relationship between reading comprehension and listening comprehension, using alternate forms of the same test rather than comparing results of a listening test with an entirely different reading comprehension test. The coefficient of correlation secured in this study was .45 indicating a significant relationship between listening and reading. The coefficient of .38 between listening and intelligence indicated that a significant relationship existed. A correlation coefficient of .46 was secured between reading and intelligence, indicating a significant relationship.

Listening comprehension was found to be significantly higher than reading comprehension on the second-grade level. These results were in agreement with previous research in this area.

The most dramatic differences between listening and reading were found when the scores of the lowest third in reading ability and the lowest third in intelligence were compared. When the scores of the lowest third in reading ability were compared, listening scores were significantly higher, suggesting that children with the largest differences in abilities could benefit most from remedial reading instruction. An increase in auditory learning activities may also be advantageous for these low-ability readers with high listening scores.

The lowest third in intelligence was also significantly higher in listening, suggesting a need for auditory learning activities for these children.

Limitations of the Study

The findirgs of the study were limited by the size of the sample, especially when highest and lowest thirds in reading ability and intelligence were considered.

The findings of this study were also limited by the background and socioeconomic circumstances of the population.

Implications for Further Research

The very limited research in this area automatically suggests a need for similar comparisons of reading and listening comprehension at the lower grade levels with regard to reading-ability groups.

The significant differences between reading and listening comprehension scores of poorer readers suggest a need for further study as to the advantages of auditory learning activities for this low-reading-ability group.

The results of this study also suggest an investigation of the possible advantages of listening activities for children who test low in intelligence.

Special remedial reading programs designed for those who test high in listening while low in reading may help to determine whether or not listening is any indication of reading potential.

Since the study was limited in terms of the socioeconomic group tested, questions may arise concerning whether these same relationships exist in lower socioeconomic groups. A replication of this study in an inner city situation could have implications for the teaching of reading as well as listening. A further comparison between presentation in dialect as well as standard English could give direction for teaching modes with divergent speakers. The presentation in dialect given to a group similar to the one in this study could give additional insights into the relationships between dialect and comprehension.

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APPENDIX A

READING COMPREHENSION TEST, LISTENING COMPREHENSION TEST, AND INTELLIGENCE TEST

The above tests have been removed due to copyright restrictions.

APPENDIX B

DIRECTIONS FOR ADMINISTERING

LISTENING COMPREHENSION TEST

Hello boys and girls. Today you are going to listen to some stories.

I am going to give each of you a booklet in which we are going to do some work. Do not write on your booklets or open them until I tell you to do so.

(Distribute booklets, face up.)

Now print your name here in the first blank at the top of the booklet. (Check to see children are doing this correctly.)

Now, listen carefully. Look at the pictures on the front of your booklet. Find the row of pictures that shows three cats, a black pony, two dogs, and a horse. I am going to ask you a question about those pictures in Row A. Listen carefully.

"Where is the black pony?"

One of the four pictures answers the question. Point to the picture that answers the question. (Pause. Point to the picture of the black pony on your booklet.) This is a picture of a black pony. It answers the question "Where is the black pony?"

Now, take your pencil and make a big X on the picture of the black pony. Make your X a big one--all the way across the picture of the black pony--then put your pencils down. (Check to see that the X is on the proper picture and is big enough to be seen easily when scoring.)

(Return to front of room.) That was very good. Now look at the last row of pictures, right underneath the ones we have just finished. I am going to read you a story. Listen carefully.

"The children are making sand castles."

One of the four pictures in Row B goes with the story. Point to the picture that goes best with the story.

That's right. (Point to picture of children making sand castles on your own booklet.) The story you heard was "The children are making sand castles," and here is a picture of children making sand castles.

Now, take your pencils and make a big X on the picture of the children making sand castles. When you have finished,

put your pencils down. Do not open your booklet until I tell you to. (Check to be sure that each child has made an X on the proper picture.)

Final Instructions

Now, leave your booklet closed and look at my booklet, please. Starting on the next page of your booklet there are more rows of pictures. In a few minutes I am going to read to you the question or the story that goes with the first row of pictures, Row 1.

You are to listen to the question or story and then put an X on the picture that goes with the story. (Point to the first exercise of the test.) Then we will do the one below it, then the next one, and so on. (On your copy, point down the first column, then the second.) I will only read the story or question once, so please listen carefully.

If you make a mistake, erase the mark and then make an X on the right picture. If your pencil breaks, raise your hand and I will give you another. Do not speak out during the test.

Starting the Test

Remember, you are to mark with a big X the picture that answers the question or that goes best with the story you are going to hear. Mark only one picture for each question or story.

Are there any questions? Do you understand? All right, turn to the first page of your booklets and we will begin.

1. Which is the boy who is shooting marbles?

2. The nurse is taking the splinter out of Betty's foot.

3. Every night at bedtime she sat with her father in an armchair and listened while he read another chapter to her.

4. It was very cooling, on a hot summer day, to sit in the tree swing and drink ice-cold lemonade.

5. After their swim, the scouts sat around the campfire and sang. One boy played a mouth organ and two others kept time with sticks.

6. The light changed, the cars going north and south stopped, and the boy on horseback started across the highway.

7. If you live near the woods, you may see deer in the evenings. They wander into back yards, along roads, and even into towns. You can watch them jump quickly away if they see you.

8. Because they were going to be late for dinner, Jack wanted to telephone his mother. He stopped by a telephone booth by the highway.

9. He put the new spotlight near the bell on the handle bar of his bike.

10. The monkey was holding a hand mirror. Every time he looked at himself in it, he put his head to one side and looked puzzled.

11. It was a black colt, all black except for a white star on its forehead and a little white mark on each front leg. The family decided to call it Star.

12. The men were unloading the truck. It was a busy street and the traffic was heavy. Cars were stopped and their drivers were waiting.

13. The candy that he was eating was peppermint. It was the end of the candy cane that he had found in his Christmas stocking.

14. Mary knew that she had left her slippers either beside her bed or in her closet. Where did she find them?

15. Every time they go to camp, they stop for lunch at Lindy's roadside place. They like to sit at the counter, and they always have hamburgers and milk-shakes.

16. The children were discussing fire escapes. Mary said her home was in an apartment building and the fire escapes were iron stairs which went up each side of the building. Andy said the fire escapes in his one-story house were the doors and windows. Mark the building in which Mary lives.

17. Did you know that the children from the village had a party out at Dr. Morey's barn last night? He had suggested that they dress like famous people from the

past. Was David lucky! He found an old army uniform in Uncle Ted's attic. It belonged to a soldier in the Revolutionary War. How was David dressed?

18. Huge balloons with baskets under them are used by weathermen. The baskets carry instruments which record wind speed and direction, temperature, and moisture high up in the air. The information these instruments give is used to predict weather on the ground. What is used to get weather information in the upper air?

19. Look at a tree trunk that has been cut with a saw, and you will see tree rings. Rings close together mean that the tree did not grow very much in the dry years. Rings wide apart tell of fast growth in the wet years. You can tell how old the tree is by counting all the rings. Which boy is trying to find out the age of a tree?

20. Her birthday present looked beautiful. It was wrapped in striped paper and there was a large bow in the middle of the package. She could tell by the shape of the package that the present must be something round.

21. As soon as Joe finished making his stilts, he practiced walking on them. The first time he fell, he was not hurt, but the second time he was scratched by a hedge.

22. Dorothy needed to wear her glasses for reading, but not when she pitched for the baseball team. Which picture shows where she did not need to wear her glasses?

23. Tom is making his first visit to a big city store. He is watching the moving stairs. His father is telling him that they are called escalators and that he should hold the handrail when he rides.

24. Our new neighbors have four boys. Ronnie, the youngest, goes to school by bus. Mike and Kim, the twins, ride their bicycles to the new junior high. Ben, the oldest, goes away to college. How does Kim go to school?

25. When you study another language, you may use cards to help you learn new words. They are called "flash cards." On one side is the word in English. On the other side the word is in the foreign language.

26. There are many different kinds of rocks. Some are sharp-edged. Some have been worn smooth by water. Some are hard, and some are soft and crumble easily into sand. Which rock has been worn smooth by water?

27. When Bill first got his little transistor radio, he carried it with him wherever he went. Now he usually leaves it at home on his bedside table. Mark the picture which shows where Bill usually leaves his radio now.

28. When Kathy came in, she told her family that there was a strange cat in the garden. Her mother went out to look, but the cat had disappeared.

29. Orange growers watch the weather carefully. In Southern California, there are a great many oil burners ready in case the winter weather turns cold. These oil burners are called smudge pots. They give enough heat to protect the fruit if the temperature drops below the danger point of thirty degrees. What shows that the temperature is below the danger point?

30. When they reached their summer cabin, the Smiths were happy to see a woodpile near the back door. This meant that they could quickly start the two fires--one in the open fireplace and one in the wood-burning kitchen stove.

31. The porpoise is so playful that people often call it a clown. When you watch a porpoise, it does seem to be grinning and doing tricks.

32. At some busy intersections, a policeman directs traffic. At others, the traffic is controlled by traffic lights that change color automatically. Mark the picture that shows automatic traffic control.

33. Hundreds of years ago, certain animals like the horse, cow, and sheep were tamed and put to work by man. Such animals are known as "domestic" animals. Other animals, like lions, tigers, and bears, still remain wild. Which is a domestic animal?

34. The earliest kinds of money were valuable objects which could be carried around and traded very easily. Shells, precious stones, and even salt were early, simple kinds of money. Now we use valuable metals and we make them into disks or coins. Which is an early form of money?

ABSTRACT

This study examined the relationships between reading comprehension and listening comprehension among second-graders, with regard to age, reading ability, and intelligence. Correlation coefficients between listening and reading, listening and intelligence, and reading and intelligence were also computed.

Sixty-six second-grade subjects were administered one form of the Gates-MacGinitie Reading Test, Primary B, to measure reading comprehension and a revised alternate form of the same test to measure listening comprehension. No reading was required in the listening comprehension test. The same subjects had been previously administered the California Short-Form Test of Mental Maturity.

The first problem investigated in this study was the relationship between reading comprehension and listening comprehension. The design of this study permitted this correlation to be made within the same test. The coefficient of correlation secured was .45, indicating a significant relationship between listening and reading. The coefficient of correlation between listening and intelligence was .38. A correlation coefficient of .46 was secured between reading and intelligence. All correlations were significant at the .01 level of confidence

for an N of 66.

Modality preference was also considered with regard to age, reading ability, and intelligence. Listening comprehension was found to be significantly higher than reading comprehension among second-graders. The subjects were then divided into three ability groups based on reading scores and again on intelligence scores. To determine modality preference, reading and listening scores were compared for the highest and lowest thirds in reading and again for the highest and lowest thirds in intelligence.

The most dramatic differences between reading and listening were found when the reading and listening scores were compared for the lowest third in reading ability and the lowest third in intelligence. In both cases, subjects scored significantly higher on the listening comprehension test. In the highest thirds in intelligence and reading ability, no significant difference was found between listening and reading at the 1% level. The groups did equally well in listening and reading comprehension. These results suggest a need for auditory learning activities for those scoring low in reading or low in intelligence.

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RUTGERS UNIVERSITY

		Instructor
Summer, 1971		
299:561	Foundations of Reading Instruction	Mrs. Kimberly
290:540	Introduction to Learning	Dr. Look
Fall, 1971-1972		
299:564	Remedial Reading	Dr. Fry
299:510	Reading and Communications in Education	Dr. Shew
290:509	Emotional and Social Maladjustment	Dr. Bardon
299:565	Laboratory in Remedial Reading	Ms. Goldsmith
290:501	Introduction to Educational Tests and Measures	Dr. Pascale
Spring, 1972		
290:514	Introduction to Adolescent and Young Adult Years	Dr. Montare
610:582	Reading Materials for Youth (7-12)	Miss Simpson
299:515	Reading for Secondary, College and Adult Students	Dr. Shew
299:566	Seminar in Reading Research and Supervision	Dr. Fry
Fall, 1972-1973		
299:599	Master's Thesis Research	Dr. Kling
Spring, 1974		
299:599	Master's Thesis Research	Dr. Fry

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