

A FIRST REPORT ON TWO DIAGNOSTIC TESTS IN SILENT READING FOR GRADES II TO IV

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I. AN ANALYSIS OF THE SILENT-READING PROBLEM IN THE LOWER GRADES

In a previous paper¹ some analytical data were presented with regard to the problem of silent reading as it appears in the upper grades. The results of this analysis may be briefly summarized. It appears that a child in the upper grades or an adult reads any particular selection of reading-matter with ease and understanding in proportion as he (1) is familiar with the subject treated, (2) has a knowledge of the words used—the vocabulary, (3) is interested in the subject, and (4) has good habits of application. It will be seen at once that this analysis makes no attempt to treat of silent-reading ability as such, but tries rather to resolve the situation into its elements and then test these elements. Indeed, since, as appears in the paper just referred to, it seems fairly clear that silent-reading ability varies markedly from one type of reading-matter to another, it is hard to believe that the ability in question is an entity to the extent which is usually assumed; analytical treatment would seem essential.

The problem of the measurement of silent-reading ability in the first four grades is, however, hardly as complex. In these grades the children are learning how to read. Reading is a definite subject in the curriculum; it is, indeed, the most important subject. The children are in process of making reading a “tool”; they are still in the act of acquiring a certain technique. The present study describes an effort to develop tests for investigating progress in the development of this technique. An attempt to measure the product of the teaching of reading in the first grade has already

¹L. W. Pressey and S. L. Pressey, “A Critical Study of the Concept of Silent Reading Ability,” *The Journal of Educational Psychology*, XII (January, 1921), 25-31.

been presented.¹ This study is therefore limited to the second, third, and fourth grades, those grades in which the technique of silent reading is usually acquired. There were two elements which seemed particularly worth study in these grades; there seemed to be two particularly important factors conditioning the development of facility in assimilative reading. The first of these factors is reading-vocabulary. A child may fail to obtain the meaning of a passage simply because he doesn't know the meanings of the words. Whatever the method by which reading may be taught, it seems reasonable to suppose that one result should be the acquirement of a fair reading-vocabulary. The second factor appears in connection with the shift from oral to silent reading. With many children, habits which were formed by reading orally in the first grades persist into the upper grades and carry over into silent reading. So in silent reading a child may whisper each word as it is read; or, if he does not actually whisper the word, he may move his lips as he reads. Some children also follow the printed words with the forefinger. Such habits probably interfere somewhat with the grasping of the meaning of what is read. It is probable that if a child reads only a word at a time instead of taking in entire phrases, he will often fail to understand because he reads the material in such small portions. But these habits are particularly pernicious in their influence upon the speed with which a child reads assimilatively.

It would seem, then, that the most important causes of lack of ready assimilative reading in the first four grades are two in number, (1) lack of vocabulary, and (2) persistence of oral-reading habits. On the basis of this analysis and these conclusions, two tests of silent-reading ability have been constructed. These tests are intended primarily as diagnostic instruments. The scores on the two tests are to be considered both separately and in their relation to each other. If some single index of reading ability is desired, however, it is only necessary to add together the two scores to secure such a general rating. The diagnostic interpretation of the test results will be considered later.

¹ L. C. Pressey and H. V. Skeel, "A Group Test for Measuring Reading Vocabulary in the First Grade," *Elementary School Journal*, XXI (December, 1920), 304-9.

II. THE TESTS

1. The first of the two tests is designed to measure *speed* in silent reading. It was felt that a measure of speed was very important, particularly as an indication of the extent to which oral-reading habits persist in silent reading. The test consists of thirty-four such sentences as:

1. This man is very out poor.
2. He went back to school did.
3. They had cold only a few books.
4. She pretty lived with her mother.

The children are told to read these sentences as rapidly as they can, and to make a circle around the *one* word in each sentence which does not belong there. The sentences were all selected from second-grade readers and contain easy and familiar words. The items of the tests are all of approximately equal difficulty. They were selected from a large number of items as being easily read by most children of these grades. The question then was, How rapidly can these sentences be read by the children *with understanding of their meaning*? As a check to insure that the sentence was to some extent, at least, understood, the very simple device has been used of putting in each sentence an extra word which the children are to find and indicate by making a mark around it.

The advantage of this device is apparent. The children can hardly find the extra word without first sensing to some degree the meaning of the sentence. But they indicate that they understand the meaning by an exceedingly simple operation, marking in some way this extra word. No writing is required—no activity which might interfere to any extent with the progress of the reading itself. The whole method is exceedingly simple and is readily grasped by the children. Out of 181 second-grade children recently tested not a single child failed to make some score; only one child scored below four. Such a result is striking evidence that the test is readily understood by even the youngest children to be given the test, and that the activity called for in the test does not in itself present a special problem.

Scoring is exceedingly easy. Nothing more is necessary than to count up the number of sentences in which the correct word and no other has been marked. The score on the test is this total number of correct sentences. Scoring is most easily done by marking the extra words in red on an unused blank and comparing each child's paper with this marked blank. The sentences do not then need to be read in scoring.

The test appears on one side of a page $8\frac{1}{2}$ by $5\frac{1}{2}$ inches or half the size of the standard typewriter sheet. On the other side are the lines for writing the name, age, etc., and also four sample lines that are used as examples by which to explain the problem of the test to the children. The papers are passed out to the children with the test side down; the children write in the information called for, and the examples are explained. By this arrangement no child gets a chance to glance over the real test before the others. When all of the directions have been given, the children turn over their blanks at one time and start. The directions used are of the question-and-answer type. They are of this type because it has been found that little children have a great deal of difficulty with anything that is in the least artificial or formal. The more natural and like a class exercise the testing can be made, the better. The directions for the speed test are as follows:

Look at the first sentence just below where you wrote your name. The words are, "I ball see a boy." Do you all see the sentence? . . . Now, there is an extra word in that sentence—a word that doesn't belong there. What is the extra word? . . . Who can find it? . . . Yes, "ball." Everyone draw a line around "ball" because it doesn't belong in the sentence. The sentence should be "I see a boy"; so draw a line around "ball."

Look at the next sentence. What is the extra word? . . . Yes, "cat." Draw a line around "cat" because it doesn't belong there. The sentence should be, "I can see my book."

Look at the next sentence. What is the extra word? . . . Yes, "ice." Draw a line around "ice" to show that it doesn't belong there.

Look at the next sentence. What is the extra word? . . . Yes, "tail." Draw a line around "tail" because it doesn't belong in the sentence.

And now, everyone, attention. On the other side are some more sentences *Do not turn your papers over yet; wait till I tell you to.* (See that no one turn paper over.) In each sentence on the other side, there is just *one* extra word. You are to find the extra word and draw a line around it. Be sure to work

just as fast as you can and get the sentences right. Now, turn over your paper and start! (Time, three minutes.)

The children are given just three minutes to work. They are then told to "Turn over your papers again at once. The side with your name on it should be up." The papers are then collected. The whole procedure takes less than ten minutes.

2. The second test, to be used following the speed test when both tests are given, is the vocabulary test. The words were selected from examination of a considerable number of second-, third-, and fourth-grade readers; no word was included in the test which did not recur frequently in these readers. The make-up of the test is quite as simple as the organization of the speed test. The first five lines are as follows:

1. What does a cow give us? bread milk eggs fish
2. What does a bird do? swim dance sit fly
3. What does angry mean? dull big mad tall
4. What is coffee? drink candy meat cake
5. What does a duck do? hop swim sing talk

The problem of the test is simply to find the word which correctly answers each question and to draw a line around this word.

This test also appears on one side of a sheet of the same size as that used for the speed test, but the other side is blank, the examples being on the same side as the test proper. The papers are again passed out, test side down, and the children are told to write their names on the back of the paper. The pages are then turned over and the problem of the test explained, using the first four items as examples. The test is not a time-limit speed test. The aim is to give all the time that is necessary. It has been found, however, that most children either finish or have progressed as far as they can go by the end of eight minutes. The papers are therefore collected at the end of this time.

It need hardly be pointed out that the method in this test also is exceedingly simple and direct and very readily understood by the children. And again, scoring is exceedingly easy. Nothing more is necessary than to count up the number of items in which the correct word and no other has been marked. The score on the test is the total number of correct items. As before, *any*

mark (line around, line under, cross, or check) unmistakably indicating the correct word and no other, is accepted. It has been found by actual trial that a teacher can score either one of these tests at the rate of three a minute.

III. VALIDATION OF THE TESTS

The tests were first developed by trial in the schools of Bloomington, Indiana, using mimeographed forms. A first form was then printed and a complete survey made of the second-, third-, and fourth-grade children of the schools of Bedford, Indiana. On the basis of these results a final revision was made.

While it would seem reasonable to suppose that the tests were to a considerable degree measuring ability to read rapidly and extent of reading-vocabulary—that is, the first test obviously requires rapid reading, and the second test obviously involves knowledge of a considerable number of words and does not take account of speed—some more certain evidence regarding the validity of the tests was desired.

As a bit of evidence in this direction, the following results are at least suggestive. Just before giving the tests at Bedford, each third-grade teacher was given a blank upon which she was asked to make ratings of her children regarding their ability in silent reading. The teachers were told to consider “the ability to comprehend quickly and easily the material encountered in the regular school work.” The estimates were made on a form modeled after the Officers’ Rating Scale. Each teacher had been in charge of the children she rated for at least four months and would thus seem capable of making a fair estimate of their ability in reading, as that ability appeared in recitations based upon an understanding of the material read. The teachers were also asked to check those children who showed the persistence of oral-reading habits by such evidences as whispering, moving the lips, or following the text with the finger.

Scores on the tests were then correlated with these estimates. There were, in all, 193 pupils whose records were included in the computation. The correlation of the teacher’s estimate with the vocabulary score was .59; the correlation of the estimate with the

speed score was .61; and the intercorrelation between the tests was .57. A further correlation of .65 was found between the ratings of the teachers and the total score on the two tests.

Such data call for further analysis. Since the combination of the two tests raises the correlation with the ratings, it would appear that the two tests supplement each other. As was desired, the two tests seem to measure somewhat different factors in contributing to a total indication of ability in assimilative reading. To analyze such a relationship, the method of partial correlation is required. It was found that the partial correlation between the score on the speed test and estimated ability in reading, vocabulary score being constant, was .41. This means that the distinctive contribution of the speed test—the contribution to the total *not* made by the vocabulary test—has a relationship to estimated ability of about this amount. The similar partial correlation between the vocabulary score and the estimates was found to be .38. Each test would thus seem to supplement the other, the combination of the two giving information of no slight degree of accuracy regarding the reading ability of the children tested.

One further check upon the validity of the tests was made. The scores of those children checked by the teachers as showing serious persistence of oral-reading habits in silent reading were indicated in the distribution. All of these children scored in the lowest 10 per cent in the speed test, though their scores scattered from top to bottom in the vocabulary test; that is, they showed the persistence of bad habits by marked slowness in reading.

IV. INTERPRETATION OF THE RESULTS

A question may arise concerning the practical use of the tests. The teacher is instructed on the sheet of directions to make a list of the scores of her pupils. She is to add together the scores on the two tests, arrange the blanks in order of total score, and then list the children in this order, putting the vocabulary score in a column just after the name, then the speed score, and, finally, the total score. The listing of the names would then appear as in Table I. The asterisk indicates those scores that fall in the highest 10 per cent according to the norms for the grade on each test; the dagger indicates those scores which fall in the lowest 10 per cent. It will

be noticed that the first child is very proficient in both tests; the next two are very good on one of the tests and do fairly well on the other. All three of these children—certainly the first one—might be considered for special promotion as far as reading is concerned. H. K. has a very good vocabulary, but is a slow reader. The same is true to a lesser degree of R. T. What these last two children need is drill in rapid reading. H. V., on the other hand,

TABLE I
SCORES OF SIXTEEN IV B PUPILS ON VOCABULARY AND SPEED TESTS

Pupil	Vocabulary	Speed	Total	Pupil	Vocabulary	Speed	Total
J. M.	34*	32*	66	R. B.	11†	33*	44
H. V.	25	34*	59	J. N.	20	21	41
R. T.	33*	24	57	L. C.	18	20	38
H. K.	34*	20	54	W. F.	27	7†	34
J. L.	30	23	53	L. M.	9†	24	33
H. M.	19	29	48	H. D.	17	16	33
J. B.	20	28	48	J. B.	25	7†	32
H. C.	18	28	46	F. D.	6†	7†	13

can read simple material with rapidity, but lacks the vocabulary necessary for the comprehension of more advanced reading-matter. He presumably needs drill in the acquirement of vocabulary. Looking at the other end of the distribution, one finds R. B. who scores in the lowest 10 per cent in vocabulary and in the highest 10 per cent in speed. A little farther down are W. F. and J. B. who need drill in rapid reading. L. M. is deficient in vocabulary. The last child, F. D., is markedly deficient in both tests; he can read neither rapidly nor with understanding. The child probably does not belong in this grade at all.

Such interpretations as these should be of real benefit to a teacher. By means of them she can obtain an indication of the root of the difficulty in a child's reading. The test does not, of course, tell just what habit is retarding a child's speed, nor does it tell just what words he does not know. The test scores have served their purpose when they have pointed out to the teacher a probable source of difficulty. From there on, the teacher must analyze the individual needs of each case. She should, indeed, use the test scores as a point of departure for the further intensive study of those children whose scores indicate that they are in any way atypical.