

AN ANALYSIS OF CERTAIN STANDARDIZED TESTS AND TEST RESULTS
WITH RESPECT TO THEIR ADEQUACY FOR MEASURING CONCEPTS
OF PUPILS IN GRADE TWO

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AN ANALYSIS OF CERTAIN STANDARDIZED TESTS AND TEST RESULTS
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OF PUPILS IN GRADE TWO

By

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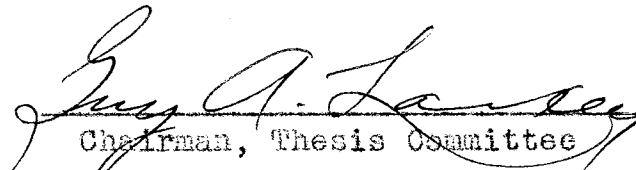
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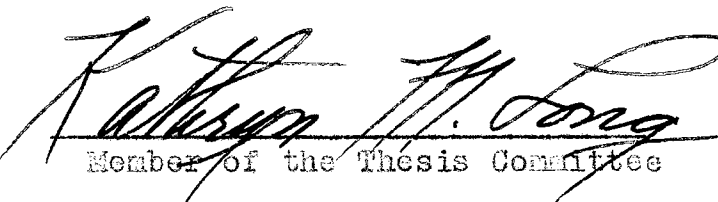
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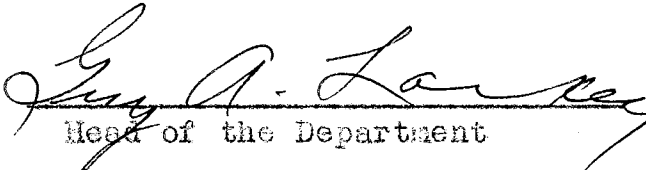
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CHAPTER I

INTRODUCTION

That children do not know the meaning of words is a truth that is accepted by persons who observe children, by teachers, and by educators. Unless rich meaning associations are aroused, one's interpretation of what is read or heard is meager and incomplete. Where reliable tests have been given to school children it was found that lack of word meanings was often the cause of pupils being retarded and the cause of failure in their school work. If children do not know the meaning of words they can not read with intelligence or understanding.

Because the concepts which a pupil possesses affect his school work, concepts should be considered when promoting and classifying pupils. Since many schools use the data from standardized tests for classifications and promotions of pupils the validity of standardized tests to measure the child's concepts has been questioned.

In an effort to answer the question, "Are standardized tests valid for the measuring of concepts?" a study was made in one second grade class of the Oilton Public Schools, Oilton, Oklahoma, beginning in September, 1940, and carried on into May, 1941.

The following tests were given to all pupils: The Master Achievement Test in Reading--Forms B and C for grade 2; Sangren-Wilson Instructional Tests in Reading, Form B for grade 2; Pressey Diagnostic Reading Test--Vocabulary, Grades 1A-3A,

Form A; Stanford Achievement Test, Primary Battery, Forms D and E, for grades 2 and 3; Otis Group Intelligence Scale, Primary Battery, Form B; individual oral test on Test 4, "Following Directions" from Form B of Sangren-Wilson Instructional Test; and an oral test on Test 2 of the Stanford Achievement Tests, Forms D and E.

CHAPTER II

PROCEDURE AND DATA

The Master Achievement Test in Reading, Form C, for grade 2 was given to all second grade pupils enrolled in Woodrow Wilson building in September, and Form B of the same test to the same class in February. This was a part of the regular reading program.

During March, April, and May the class was given these standardized tests as part of a remedial reading program:

- (1) Otis Group Intelligence Scale, Primary Battery, Form B;
- (2) Sangren-Wilson Instructional Test in Reading, Form B, for grade 2;
- (3) Pressey Diagnostic Test in Reading--Vocabulary, Form A, for grades 1A-3B; and
- (4) Stanford Achievement Test, Primary Battery, Forms D and E, for grades 2 and 3.

The results of these tests, in tabular form, are given on pages 5 to 8 inclusive of this study.

Later, portions of these tests that seemed suitable for checking concepts were given again, as oral tests.

The oral test on test 4 of the Sangren-Wilson test was given to each pupil individually, when only he and the instructor were in the classroom. The child was asked to read each paragraph aloud, and tell why he had answered as he did. No help was given, except in enabling the child to better express himself. The reactions and responses, as recorded by the instructor, will be discussed in the part of this study devoted to analysis.

Test 2 of the Stanford Achievement Test, in both Form D and Form E, was given in class. The first part of all statements was written on the blackboard before class time. Each child, in turn, read aloud one statement from each form and supplied the needed word or words to make the statement true. No help was given, and no comment was made. The responses were recorded and each child's oral responses were compared with his answers to the same statements on the written test. The incomplete sentences, taken from the tests, together with the written and oral responses are given on pages 9 and 10.

TABLE I
TEST RESULTS

Pupil	Intelligence Scale, Otis Primary: Form A*			Test, Master Achievement		Diagnostic Test, Pressey; Form A	
	I.Q.	C.A.	M.A.	Grade Equiv. Form C**	Form B***	Test Score	Vocabulary Range
A	123	7-7	10-7	2.2	2.2	42	800-1000
B	121	7-6	10-5	1.3	2.3	43	800-1000
C	121	7-6	10-4	1.4	2.8	64	1200-1400
D	121	8-1	11-1	2.0	2.3	45	800-1000
E	120	7-9	10-6	1.8	3.0	65	1200-1400
F	120	7-5	10-1	2.2	3.2	56	1000-1200
G	119	7-7	10-2	1.5	2.3	52	1000-1200
H	119	7-5	10-0	1.4	2.3	47	800-1000
I	118	7-4	9-10	1.7	2.8	58	1000-1200
J	116	7-7	9-11	1.4	2.4	47	800-1000
K	115	7-4	9-6	1.3	1.6	40	800-1000
L	114	8-3	10-4	2.6	3.2	62	1200-1400
M	112	7-11	9-9	3.1	4.0	73	1400-1600
N	112	7-6	9-6	1.4	2.4	44	800-1000
O	112	7-4	9-3	1.5	2.6	41	800-1000
P	110	7-4	9-5	2.2	2.7	53	1000-1200
Q	110	7-5	9-2	2.0	2.2	47	800-1000
R	109	8-11	10-4	2.0	2.3	45	800-1000
S	109	7-7	9-3	2.2	2.8	68	1200-1400
T	108	7-7	9-2	1.3	2.3	42	800-1000
U	103	8-8	9-6	3.2	3.4	55	1000-1200
V	103	8-0	9-0	2.4	2.3	51	1000-1200
W	97	7-7	8-1	1.6	1.9	41	800-1000
X		7-9		1.5	2.6	67	1200-1400

*Date given: March 5, 1941.

**Date given: September, 1940.

***Date given: February, 1941.

TABLE II

SCORES, IN PER CENT, FROM "INSTRUCTIONAL TESTS IN READING"

GRADE II - FORM B, BY PAUL V. SANGREN AND MARY C. WILSON

Pupil	Intelligence Quotient*	Chronological Age*	Mental Age*	Word Recognition	Word Comparison	Phrase Comparison	Following Directions	Understanding Sentences	Anticipating Meanings	Using Judgment	Noting Details	Noting Details	General Significance	Recognition of Meaning of Words
A	123	7-7	10-7	83	100	75	80	100	100	100	83	64	60	93
B	121	7-6	10-5	94	93	83	60	100	40	70	96	79	80	83
C	121	7-6	10-4	94	97	100	50	90	100	100	100	86	100	97
D	121	8-1	11-1	94	100	100	60	90	100	100	100	79	80	97
E	120	7-9	10-6	94	93	100	40	100	90	90	100	100	100	83
F	120	7-5	10-1	94	100	75	80	100	100	100	100	89	80	100
G	119	7-7	10-2	83	93	91	90	100	90	100	100	75	100	90
H	119	7-5	10-0	89	87	83	30	100	70	100	96	86	100	83
I	118	7-4	9-10	94	97	91	80	80	100	100	96	57	80	80
J	116	7-7	9-11	78	87	17	60	60	90	70	92	86	60	80
K	115	7-4	9-6	67	77	67	20	90	60	70	63	43	40	77
L	114	8-3	10-4	100	83	91	80	100	100	100	100	100	100	100
M	112	7-11	9-9	94	100	100	90	100	100	100	100	89	90	90
N	112	7-6	9-6	72	93	83	30	90	80	50	75	39	60	
O	112	7-4	9-3	72	70	83	70	100	100	90	75	68	60	93
P	110	7-4	9-5	100	90	91	50	90	100	80	100	86	100	97
Q	110	7-5	9-2	100	87	75	60	80	50	90	96	79	40	83
R	109	8-11	10-4	100	33	91	20	80	60	70	83	18	60	93
S	109	7-7	9-3	72	97	91	80	100	100	100	96	79	80	83
T	108	7-7	9-2	100	80	83	20	80	90	50	96	43	60	93
U	103	8-8	9-6	94	93	100	70	100	90	100	100	75	100	90
V	103	8-0	9-0	94	90	100	50	100	90	70	92	89	100	90
W	97	7-7	8-1	56	80	75	0	70	70	70	67	40	20	77
X		7-9		100	100	100	60	90	90	100	100	89	60	93

* Arthur S. Otis, Otis Group Intelligence Scale, Primary Examination: Form A.

TABLE III

GRADE EQUIVALENTS, SHOWN BY THE STANFORD ACHIEVEMENT TEST

PRIMARY BATTERY: FORM D* AND FORM E**

Pupil	Otis Scale:***			Par.		Word				Arith.		Arith.	
	I.Q.	C.A.	M.A.	Meaning		Meaning		Spell.		Meaning		Comp.	
				Form:	Form:	Form:	Form:	Form:	Form:	Form:	Form:	Form:	Form:
				D	E	D	E	D	E	D	E	D	E
A	123	7-7	10-7	2.5	3.0	2.4	2.9	2.1	2.4	2.8	3.4	2.6	3.1
B	121	7-6	10-5	2.4	3.0	2.6	2.6	1.7	2.2	1.7	3.1	2.2	2.9
C	121	7-6	10-4	3.0	3.4	2.7	3.1	2.8	3.2	3.5	3.5	2.9	3.1
D	121	8-1	11-1	2.9	3.4	2.4	3.2	1.9	2.4	3.0	3.5	2.9	3.0
E	120	7-9	10-6	3.1	3.6	3.2	3.0	3.2	3.0	3.1	3.4	2.9	2.9
F	120	7-5	10-1	3.6	3.8	3.0	3.2	2.7	3.0	2.6	4.0	2.8	2.9
G	119	7-7	10-2	3.0	3.5	3.2	3.1	2.4	3.0	2.4	3.4	2.9	3.0
H	119	7-5	10-0	2.8	3.1	2.4	2.7	1.7	2.2	3.0	3.4	2.9	2.9
I	118	7-4	9-10	3.0	2.9	2.4	2.9	2.5	3.0	2.1	2.4	2.2	1.9
J	116	7-7	9-11	3.4		2.7	2.6	2.8		2.4	3.0	2.9	
K	115	7-4	9-6	2.2	2.1	2.4	2.5	2.2	2.4	2.1	2.2	2.9	3.0
L	114	8-3	10-4	3.6	3.5	3.1	3.4	3.2	3.1	2.4	2.6	2.9	2.2
M	112	7-11	9-9	4.2	3.9	3.4	3.7	4.1	4.0	3.1	4.0	3.0	3.0
N	112	7-6	9-6	2.2	2.2	2.4	2.8	1.9	2.1	2.4	2.4	2.2	2.2
O	112	7-4	9-3	3.4	3.0	2.9	3.0	2.9	3.0	3.5	3.8	3.0	3.0
P	110	7-4	9-5	3.1	3.0	2.6	2.9	2.4	3.0	2.8	3.5	2.6	2.9
Q	110	7-5	9-2	2.2	2.6	2.4	2.5	1.9	2.1	2.8	2.2	2.6	2.8
R	109	8-11	10-4	2.4	2.0	2.4	2.5	1.4	1.9	1.9	1.9	2.2	1.7
S	109	7-7	9-3	3.2		2.9	3.1	3.5		2.8	3.1	2.8	
T	108	7-7	9-2	2.6	2.7	2.3	2.6	2.2	2.6	2.1	2.8	2.8	3.1
U	103	8-8	9-6	3.4	3.5	3.2	3.4	2.9	3.4	3.0	3.8	2.9	2.9
V	103	8-0	9-0	2.5	3.5	2.4	2.8	1.7	2.6	1.9	2.0	2.2	1.5
W	97	7-7	8-1	2.4	2.0	2.4	2.4	1.9	2.2	2.1	2.4	2.2	2.6
X		7-9		3.3	3.5	2.7	3.4	2.9	3.3	3.0	2.8	1.9	2.6

*Date given: March 8, 1941.

**Date given: May 13, 1941.

***Arthur S. Otis, Otis Group Intelligence Scale, Primary Examination-Form A.

TABLE IV
CLASS SUMMARY

NAME OF TEST	HIGH	MEDIAN	LOW
Sangren-Wilson Instructional Test (All scores given in per cent)			
1. Word Recognition	100	94	56
2. Word Comparison	100	93	33
3. Phrase Recognition	100	91	17
4. Following Directions	90	60	0
5. Understanding Sentences	100	95	60
6. Anticipating Meanings	100	90	40
7. Using Judgment	100	95	50
8. Noting Details	100	96	63
9. Noting Details	100	79	18
10. General Significance	100	80	20
11. Recognition of Meaning of Words	100	90	77
Pressey Diagnostic Reading Test			
1. Vocabulary	1400	1000	800
Otis Intelligence Scale			
1. Chronological Age (Yrs.-Mo.)	8-11	7-7	7-4
2. Mental Age (Yrs.-Mo.)	11-1	9-10	8-1
3. Intelligence Quotient	123	114	97
Master Achievement Test (Grade equivalent of scores)			
1. Reading-Form C	3.1	1.8	1.3
2. Reading-Form B	4.0	2.5	1.6
Stanford Achievement Test (Grade equivalent of scores)			
1. Reading: Paragraph Meaning-Form D	4.2	3.0	2.2
2. Reading: Paragraph Meaning-Form B	3.9	3.05	2.0
3. Reading: Word Meaning-Form D	3.4	2.6	2.3
4. Reading: Word Meaning-Form E	3.7	2.9	2.4
5. Spelling:-Form D	4.1	2.4	1.4
6. Spelling:-Form E	4.0	2.8	1.9
7. Arithmetic Reasoning:-Form D	3.5	2.7	1.7
8. Arithmetic Reasoning:-Form E	4.0	3.1	1.9
9. Arithmetic Computation:-Form D	3.0	2.8	1.9
10. Arithmetic Computation:-Form E	3.1	2.9	1.5

WRITTEN AND ORAL RESPONSES TO TEST 2, "WORD MEANING",
FROM THE STANFORD ACHIEVEMENT TEST, FORMS D AND E

Pupil	Incomplete sentence	Word underlined	Oral response
A	Silk is a kind of	drink	Couldn't tell.
	An oak is a kind of	tree	"tree".
B	March is the name of a	year	"month".
	Wool is used to make	clothes	"coats".
C	Great means	big.....	"good".
	A swallow is a	child	"I swallow when I drink."
D	To shine is to be.....	bright	Couldn't tell.
	To weep is to	cry	"cry".
E	A crowd means many	persons	"A crown means many things."
	Plain means	(omitted)	"Plain you are going to do something."
F	Near means	close	"close".
G	A cellar is part of a....	building	"cupboard".
	A noise is a	sound	"sound".
H	Cheese is	food	Couldn't read.
	Blue is a	color	"color".
I	A path is a place to	walk	"walk".
	To shut is to	close	"Short is too little."
J	A room is part of a	house	"house".
K	A baby is a	child	"little person".
	A forest has many	trees	"trees".
L	An officer may be a	soldier	"man".
M	A maiden is a	girl	Couldn't tell.
	To repair is to	spend	"remove".
N	To crush is to	break	Couldn't read.
	A cow is a kind of	animal	"animal".
O	A chapel is a	(omitted)	Couldn't tell.
	We laugh when we are	happy	Couldn't read.

(continued)

- P Yesterday is aday "day".
Big meanslarge "large".
- Q A daughter is ason Couldn't tell.
A breeze is ameasure "cool breeze".
- R A castle is awheel Couldn't tell.
A nest is a bird'segg "bird nest".
- S To speed is to golast "spend".
- T A baker makesbread Couldn't tell.
A library contains(omitted) "are cards".
- U To lift is to(omitted) "turn".
Overshoes are likerubbers "rubbers".
- V A village is aperson "windmill".
To begin is toplay "start".
- W A dog is a kind ofanimal, cow ... "animal".
Butter is made frommilk "cows".
- X Across meansbehind "going across".
A wrong act isbad "something wrong".

CHAPTER III

ANALYSIS

The standardized tests used in this study are recommended by persons who speak authoritatively of tests because of the validity of their content and because they are easily administered, scored, and interpreted.

Most of these tests that relate to reading are of the multiple choice type, with either single or plural type of response. It is well to keep in mind, then, that while there is some guessing in multiple choice questions,¹ investigations have shown that only a few questions are answered by pure guessing,² and that in the primary grades children are much more likely to omit a question than to guess at the answer.

Besides the usual definition of concept as being a notion, thought, or mental impression; an idea; it is also interpreted as being synonymous with comprehension, understanding, and meaning. In this study the term concept is considered synonymous with meaning.

The question "Would the child need to know the meaning of the words in order to perform the tasks indicated?" was applied to each paragraph, question, or problem, in all tests. After a careful study of the tests, the writer and another member of the faculty, working independently of each other, found that their answers to the question were in complete

¹Louise W. Webb, and A. M. Shotwell, Standard Tests in Elementary School, p. 511.

²Ibid. p.513.

accord. Their comments and conclusions are set forth as follows:

TEST I. SANGREN-WILSON INSTRUCTIONAL TESTS IN READING.

FORM B for GRADE 2.

1. Type of test: Word Recognition.

Directions: Draw a ring around each word you can see in the picture.

Comments: There was no way to determine that the child matched the word and picture correctly. He may have omitted words because the picture was misinterpreted--a shallow bowl from which a kitten was drinking might have been interpreted as a saucer, and the word bowl not encircled for that reason, and not because the word, itself, was not recognized.

Conclusions: Word meaning is necessary in most cases.

2. Type of test: Word Comparison.

Directions: Read each sentence. Then look at the words below the sentence. Draw a line under all the words which were used in the sentence.

Comments: Word matching, with no meaning involved.

Conclusions: Word meaning is not necessary.

3. Type of test: Phrase Recognition.

Directions: Draw a line under each phrase which tells about any one of the pictures at the top of the page.

Comments: See comments in test 1.

Conclusions: Word meaning, in most cases, is necessary.

4. Type of test: Following Directions.

Directions: This is a test to read very carefully. You will be told to do something and you must do exactly what you are told to do. Read

the sentences. Then do just what you are told to do.

Comments: Difficult because of the several interpretations that could have been correct, yet not agree with the concept of the author, which was the only acceptable answer.

Conclusions: Word meanings are necessary.

5. Type of test: Understanding Sentences.

Directions: Read the sentence. Draw a line under the word which is correct.

Comments: Child has to complete a sentence, using a multiple choice of words.

Conclusions: Word meanings are necessary.

6. Type of test: Anticipating Meanings.

Directions: Each story asks a question. If "Yes" is the answer, draw a line under "Yes". If "No" is the right answer, draw a line under "No".

Comments: Involved. Drawing a conclusion from two statements of fact in order to answer a related question.

Conclusions: Word meanings are necessary.

7. Type of test: Using Judgment.

Directions: Read the story. Then draw a line under the word which makes the best answer.

Comments: Drawing conclusions from three statements to complete a fourth statement. Multiple choice answer. Involved.

Conclusions: Word meanings are necessary.

8. Type of test: Noting Details.

Directions: Read the story. Then draw a line under the right answers to the questions.

Comments: Four statements and three questions to be answered by underscoring "Yes" or "No".

Conclusions: Word meanings are necessary.

9. Type of test: Noting Details.

Directions: In each blank, write one word which will make the sentence correct.

Comments: Completion sentences with the needed words in the sentences in the paragraph.

Conclusions: Matching sentences. Word meanings not needed.

10. Type of test: General Significance.

Directions: Draw a line under the correct answer.

Comments: Completion sentences with multiple choice answers. Two were worded exactly like the paragraph. The other three required inference.

Conclusions: Word meanings were necessary in answering two parts, or more; no word meanings needed for two parts.

11. Type of test: Recognition of Meaning of Words

Directions: Draw lines under all the words which name a color, that are toys, etc.

Comments: The score is the number of words correctly underlined. No penalty for underlining a wrong word.

Conclusions: Word meanings are necessary; primary pupils do not underscore words, as a rule, unless they think they know them.

II. PRESSEY DIAGNOSTIC READING TEST, FORM A, GRADES 1A-3A.

1. Title of test: Reading test-vocabulary.

Directions: On each line there are three real words and one thing that is not a word. You are to find this one thing that is not a word, and make a mark under it.

Comments: A measurement of size of reading vocabulary. Recognition of the word as something that has been seen before is all that is necessary.

Conclusions: No word meanings are needed to pass this test.

TEST III. MASTER ACHIEVEMENT TEST IN READING, FORMS B AND C.

1. Title of test: Reading Test.

Directions: Read each story and then the two sentences that follow the story. Each sentence is followed by four words. Only one of these four words is correct. Draw a line under the right word to complete each sentence.

Comments: One sentence in each story can be completed by matching it with the sentence in the story. By matching accurately, a score of 20 can be made; this score gives a reading grade score higher than grade 2.

Conclusions: Word meanings are necessary for 20 parts of the test, unnecessary for the remaining 20. Pupils can rank above grade 2 without word meanings.

TEST IV. STANFORD ACHIEVEMENT TESTS, FORMS D AND E, FOR GRADES 2 and 3.

1. Title of test: Reading: Paragraph Meaning.

Directions: Read each story carefully and write just one word on each dotted line to show what has been left out.

Comment: The number of given responses judged to be acceptable or correct and those considered incorrect are both liberal and adequate.

Conclusions: Word meanings are necessary.

2. Title of test: Reading: Word Meaning.

Directions: In each sentence draw a line under the word that makes the sentence true.

Comment: It is a fair test for any second grade child because there are enough statements on the second grade vocabulary level about things common to any section of the country.

Conclusions: Word meanings are necessary.

3. Title of test: Spelling.

Directions: First I shall pronounce a word, next I shall read you a sentence with that word in it. Then I shall say the word again.

Comment: There are 40 words in each form of the test that are to be given second grade pupils. Of each group only 6 or 7 words are homonyms, requiring word meaning to spell. A child needs to spell only 12 words to receive a grade equivalent score of 2.

Conclusions: Word meanings are not necessary.

4. Title of test: Arithmetic Reasoning.

Directions: Find all the answers as quickly as you can. Write all the answers on the dotted lines. Use the margins of the paper to figure on.

Comments: These are difficult tests for second grade pupils, but they are scored in such a way that a child has a fair chance to score high. One correct answer on Form E or two correct answers on Form D will give a grade equivalent of 2. This could be scored without an idea of word meaning if the child reasoned as a teacher of mathematics said one of her pupils did: "I never pay attention to words in my problems; I just add when there are three numbers, subtract when there are two numbers about the same size, and multiply when there are two numbers and one is much bigger than the other. I don't like to divide." Use of the margins to figure on helps the teacher to understand how the child arrived at the answers.

Conclusions: Word meanings are necessary to score above second grade, but it may be possible to score second grade without reading meaning into the instructions.

5. Title of test: Arithmetic Computation.

Directions: Get the answers to these examples as quickly as you can without making mistakes. Look carefully at each example to see what you are to do.

Comment: To have a grade equivalent of 2, the child must answer correctly six problems on Form D or seven problems on Form E. Assuming that the child could do only one process, addition or subtraction, he could disregard all symbols and yet solve enough problems to give him a grade equivalent of 2 simply by putting the sum, or the difference, as the answer to each problem on the test.

Conclusions: Word meaning is not necessary.

It is conceded that the acquirement of concepts is a complex process involving one's mental capacity and motor reactions, and that concepts are conditioned by experiences, environment, and training. Thus one makes, rather than receives, his meanings or concepts. There is no meaning on a printed page or in a spoken word; only the symbols of meaning are there. The printed or spoken symbols act merely as a trigger, stimulating the reader or listener to make the concept for which the symbols stand. A reader's or listener's acquirement of the meaning intended by a writer or speaker is an active, rather than a passive process, and it is not possible to gain the meaning of a given language symbol, oral or written, unless he has in his mind the concept for which the symbol stands. A person can rarely, if ever, make in his mind a meaning, or concept, identical with the concept in the mind of another--he can hope only to approach it.¹

¹Paul McKee, Language in the Elementary School, p. 10.

A comparison of the words underlined in test 2 of each Stanford Achievement Test with the responses given on the oral test given later, as shown on pages 9 and 10, is of value to this study.

In the written test the child was given an incomplete sentence and a list of five words, and was told to underline the word that made the sentence true; in the oral test the incomplete sentence was given, and the instructions were to give the word necessary to make the sentence true. In the written test the child's answer was suggested, and limited; in the oral test the child had no suggestions given, and no restrictions, his own concepts and vocabulary determined his response.

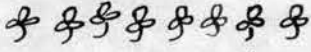
The time allowed for this study limited the oral test to one sentence from each form for each pupil. While this sampling was indeed a meager one, it did reveal much about the concepts of the children.

It is significant that in many cases the oral response is the same as the approved written response; that three-fifths of the pupils who could not give an oral answer had been able to select the right answers on the written test, while three-tenths of them had selected wrong answers, and one-tenth had omitted the question; and that the number of pupils whose written and oral responses were different, but both wrong, equalled the number whose responses, though different, were both basically correct.

A study of answers written on the standardized tests, when compared with the oral responses to the same test given later, shows clearly the many interpretations possible for children to make. The examples that follow were taken from test papers belonging to second grade pupils. In each case the owner, on the oral test given later, was able to show plainly that he knew the words, understood the story, and could answer the question; it is because he failed to conform with the concept of the authors that he recorded his answer in a manner judged to be incorrect.

These examples have been chosen from "Instructional Tests in Reading", Grade II-Form B, by Paul V. Sangren and Mary C. Wilson. The answer approved by the authors is given first in each case, followed by answers taken from the test papers of the children. Drawings are recorded as nearly as possible like the originals.

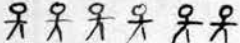
"Jane has a flower garden. She went out to gather some flowers. Jane picked eight daisies. Write the number showing how many daisies Jane picked on this line."

Answers: 8; eight; eight daisies; 

"The two squirrels in our yard are gathering nuts for winter. They have stored many in a hollow tree. Now they are eating two nuts. Make a two in this square to show how many they are eating."

Answers:

"There are six people in May's family. Make a six on this line.....to show how many people there are in May's family."

Answers: 6; six; 

"You have two names. One of your names comes first and one of them comes last. Here are two lines. Write your first name on the second line. Then write your last name on the first line."

.....

Answers: Name in reverse order; first name, last name; last name, middle name, first name; etc. One child, I.Q. 121, wrote her full name on the first line, her nickname and last name on the second. On the oral test she explained that the first name she was called by was really just a nickname, but after she went to school the teachers called her by her real name. That meant, of course, she was certain, that she should write her 'first' name--the nickname--on the second line, and the last name she was called by--her first and last name-- should be the one the teachers called her, so she wrote it on the first line. This was counted incorrect on the written test.

CHAPTER IV
CONCLUSIONS

The class used in this study was not selected with regard to ability and achievement; it was the only class in the second grade at the Woodrow Wilson building, and, with the exception of ten pupils who attended a wing school, included all the second grade pupils in the school district.

From the data shown in table IV, page 8, it is readily seen that the class tends to be average, or above the average, both in intelligence and in achievement, as measured by the tests. Intelligence quotients range between 97 and 123, with the class median at 114; achievement, according to the norms set up by makers of the standardized tests used, varies more than the two grade spread that would be expected, but the trend is toward the higher grade. In most instances the grade equivalent of the class median is equal to or superior to their grade equivalent.

It is reasonable to expect then, with the high rating in intelligence and achievement, that the children have a command of the mechanics of reading and language at their grade level, and would make the same meanings for the written symbols as for the spoken symbols, since the attainment of meaning is the same in the two cases.¹

From a study of the standardized tests and the written and oral answers given by pupils, it becomes clear that the difference in the reader situation and the manner of scoring

¹Paul McKee, Language in the Elementary School, p. 39.

the answers may so condition or limit the reader's response that the test can not be a valid measure of his concepts.

Too, there is evidence in these tests that children with no concept of the key word, or with an erroneous concept, have been able to complete the test correctly, and that others who understood the key words and obtained the correct meaning from the paragraph have given answers in a form not accepted by the authors of the tests.

For example, from the Master Achievement Test in Reading, Form B:

Directions: Draw a line under the one right word which completes the sentence.
 Statements: Mary has a pet goose. When Mary walks, the goose walks. When Mary runs the goose runs.
 Problem: Mary's pet is a goose goat game squirrel.

In this problem the child is reading to find the answer, and can complete the sentence correctly by matching the word in the problem with the word in the group of statements, without any knowledge of the word meaning.

Again, from the same test:

Directions: Draw a line under the word that makes the sentence true.
 Problem: A swallow is a flower, tree, ship, child, bird.

One pupil underscored the word "child", which was scored as incorrect, "bird" being the approved answer. On the oral test the child's response was, "I swallow when I drink". The oral response is one concept of the key word, but not the one acceptable to the author. It is inferred that she marked the word she associated with "swallow" because no word was given that conveyed her concept.

Another child was more fortunate in her choice of word associations. When she read in the Stanford Achievement Test, "A cellar is a part of a forest gate building shoe", she marked the correct answer, because she thought that a cellar was the same thing as a cupboard, and cupboards are found in buildings but not in forests, gates, or shoes. Her answer on the written test was, of course, scored as correct.

²McKee quotes from "Methods of Instruction in the Social Studies" by E. Horn:

During the past several years, a considerable amount of evidence has been collected relative to the quality of the meaning which pupils and students make in reading the books that they use in school. The data show in general that reading achievement in our schools is inexcusably low, much lower than most teachers probably think it is and that scores on standardized tests show it to be, and that many children are adept at recognizing and reproducing the symbols of meaning without making the meaning which they represent.

This was found to be true, in several instances, in these tests. On the written tests pupils had correctly answered questions that on the oral test they were unable to read, or if they could read, did not know the meaning of the key words. Whether the answers were derived by matching, by a process of elimination, or were simply guesses, can not be learned from an examination of the written test.

Perhaps the test itself is at fault in at least one instance. The Sangren-Wilson Instructional Test in Reading, Form B, uses the phrases "Write the number .." and "Make a

²Paul McKee, op. cit., pp. 19-20.

two .." (turn back to page 19 for the complete statements) but permits only the Arabic numeral as an acceptable answer in each case. There is a technicality that might confuse a college graduate, and it isn't surprising that a second grade pupil thinks that write, contrasted with make, means for him to spell out the word for the number; and when the sentence contains the word for the number and the line given for his answer is one and three-fourths inches long, who can blame him?

McKee says that there is reason to believe that even if the pupils are able to recognize and reproduce the symbols they read and hear, the meaning which they make is "almost unbelievably vague or incorrect".³ They just do not make adequate meaning for what they read, and for much that they hear.

Consider the young child who learns so quickly to repeat the nursery rhyme, "Jack and Jill". He not only repeats the rhyme, but can tell you who fell, and what was broken. But what meaning does he make for "crown" and for "tumbling"? Are his concepts clear, or vague? Are they correct, or incorrect? Other things being equal, you could reasonably expect that child, when he is older and more mature, to reproduce the symbols for what he reads or hears, whether or not the meaning is adequate.

Since the forming of concepts is a mental process which may not be observed directly, it must be inferred. Written

³Paul McKee, op. cit., p. 17.

tests that are performed silently and judged by silent (written) responses do not lend themselves to the measurement of concepts. Oral tests that permit the pupils to make verbal and motor responses give a better insight into the formation of the concept.

Standardized tests are purposely constructed so that the scoring is done objectively, and this necessitates the close adherence to the scoring key, and limits the wording of the problem in order to control the answers. Because of this, standardized tests devised for measuring achievement and those constructed for diagnostic purposes may not measure concepts adequately, and should not be used for such a purpose unless provision is made for oral tests as well.

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