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ABSTRACT

Four major areas of research into verbal development are discussed: (1) the relationships between behaviors hypothesized to be associated with one of the four major language skills, (2) the sequencing or ordering of behaviors within a skill, (3) the relationships between behaviors associated with different skills, and (4) the relationships between knowledge or understanding of language properties and verbal performance. The basic strategy for research on verbal development is dependent on a scheme which contains the following important elements: (1) a mapping of the entire verbal domain, so that results of researches in particular segments can be related to each other, (2) the use of the same scheme across investigators and situations where appropriate, to maximize understanding both of the phenomena under consideration and of the investigators by each other, and (3) the development of reliable and longitudinal measures specific to the elements of the scheme. Verbal measures for use with children from three and one-half years of age to age eight-nine (Grade 3) are presented in a table, and verbal skills, receptive and productive, are also tabulated. (DB)

RESEARCH MEMORANDUM

RM-73-1

VERBAL DEVELOPMENT IN YOUNG CHILDREN: STRATEGIES FOR RESEARCH AND MEASUREMENT

Scarvia B. Anderson

This paper was presented at the XXth International Congress of Psychology, Tokyo, Japan, August 15, 1972.

Educational Testing Service
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VERBAL DEVELOPMENT IN YOUNG CHILDREN: STRATEGIES FOR RESEARCH AND MEASUREMENT*

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A major objective of early education all over the world is the development of verbal abilities in children. This is true even at the kindergarten and preschool levels where there has been a marked shift in recent years from almost exclusive emphasis on social and emotional development to at least equal concern for intellectual progress.

A recent report from Sweden (Sverud, 1971) includes among the ten major objectives of nursery school education these four which are related to verbal development:

Able to CONVEY A MESSAGE

Able to RECEIVE AND INTERPRET A MESSAGE

Proficient in PREPARATORY READING AND WRITING SKILLS

Able to IDENTIFY, NAME, AND DESCRIBE

British infant schools for ages 5 to 7 stress activities designed to "widen the children's experience...linked, where suitable, with reading, writing, and number, the aim being to stimulate an interest in books as sources of information and pleasure,...and fluency in oral and written expression" (Education in Britain, 1966).

Russian concern for language training is illustrated by a few stated objectives of the school program for six-year-olds (Chauncey, 1969):

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To speak distinctly and correctly in accordance with the standards of Russian literary pronunciation.

To read poems, tell fairy tales, and retell short stories.

To answer questions on the contents and illustrations of a text and to comprehend the highly expressive language of traditional fairy tales, stories, and poems.

The "classic" statement of elementary school objectives in the United States (Kearney, 1953) lists "communications" as one of the nine broad areas of elementary learning, with specific goals in reading, word study, book and library skills, speaking, spelling, handwriting, composition, listening, and vocabulary.

I understand that Japanese schools are not plagued with a "reading" problem to the same extent that schools in many other countries are. Nevertheless, a large portion of the early school curriculum is devoted to training in reading and writing skills.

Whatever the national differences in success and emphases, most psychologists, teachers, and parents generally agree that by the time the child has completed a certain relatively small number of years of formal schooling it would be nice if:

-- He could listen to connected discourse of the appropriate level and comprehend and interpret what he heard. He could remember main points and details. He would be aware, as he listened, of some of the special word and sentence properties characteristic of the language.

-- He could read paragraphs of the appropriate level and both comprehend and interpret what he read. He could extract key pieces of information from the written text. He would recognize some of the special properties of written words and sentences.

-- He could speak audibly, comprehensibly, and connectedly about a topic appropriate to his age, using appropriate word choices and syntax.

-- He could write intelligibly, legibly, and with some organization about a topic relevant to him, using word choices, forms, and correct sentence structures appropriate to his age. At the same time, he would misspell only the more difficult words and he would adhere to the simpler conventions of punctuation-capitalization.

To study or monitor verbal skills development systematically, it would seem helpful to try to "plot out" in as parallel form as possible the precursors to, concomitants of, and manifestations of the skills we call "listening," "reading," "speaking," and "writing." The strategies proposed in this paper rest upon such an attempt. Let us look at Table 1.

The first two columns treat the receptive skills, listening and reading; the last two, the productive skills, speaking and writing. The items labeled A through L in each column refer to behaviors presumed to be related to the ultimate behaviors defined by the items in the bottom row labeled M.

The first research question, then, that the table poses is the degree to which the behaviors within each column <u>are</u> related to one another. Or, conversely, how distinctive are they? Can we identify differential development of the skills? Such research summaries as that of Calfee and Venetsky (1968) might discourage attempts to deal with these questions. However, as they point out, "Correlation is not causality....It is hard to believe that the sum total of a child's intellectual ability can be measured by his knowledge of the letters of the alphabet prior to first grade." They and other researchers have been severely limited by existing verbal measures; these measures are not

only global in nature but are based on widely different and undefined views of verbal functioning. Hence a major concern of this paper is with reliable measures sensitive to well delineated skills.

The second kind of question that Table 1 raises is the extent to which items within columns are hierarchically ordered. It would certainly seem that abilities first to perceive and then to discriminate forms would be necessary before the behavior called "reading" could occur--and ability to make some kind of mark would precede writing words and sentences. But the degree to which the mastery of a skill described on one line is necessary to performance of a skill described on another line or the degree to which a skill on one line comprehends skills on earlier--or later--lines can only be determined empirically.

A third set of research questions revolve around the relationships between items across columns (skill areas). We tend to accept the propositions that the child generally recognizes the meaning of words he hears before he recognizes the meaning of the same words when he sees (reads) them and that it is more difficult for a young child to write most words than to say them when he is appropriately prompted. The generally accepted verbal development order is listening, speaking, reading, and writing. But what specific principles govern relationships of behaviors across the skill areas--principles that can be stated in developmental, test difficulty, or individual difference terms? Under what circumstances, if ever, is it more difficult for a child to comprehend the heard than the read word? How do children vary in such dimensions?

It is obvious to those studying the chart that items on lines G and H are different in kind from the other entries. They relate more directly to knowledge <u>about</u> the language than to skill <u>in</u> the language. The phrases on these lines are meant to encompass a wide variety of contents--for example:

Table 1

VERBAL SKILLS

	Receptive		Productive	
	Listening	Reading	Speaking	Writing
A	Auditory Perception	Visual Perception	Sound Production and Modulation	Mark Making
B	Tone Discrimination	Form Discrimination and Analysis		Form Copying
C	Phoneme Discrimination	Letter Discrimination	Phoneme Articulation	Letter Copying
D	Word Discrimination	Word Discrimination	Word Articulation	Word Copying
E	Letter Recognition		Letter Naming	Letter Making
F	Word Recognition		Word Naming	Word Making
G	Recognition of Word Properties	Recognition of Word Properties	Application of Knowledge of Word Properties	Application of Knowledge of Word Properties (incl. Spelling)
H	Recognition of Sentence Properties	Recognition of Sentence Properties	Application of Knowledge of Sentence Properties	Application of Knowledge of Sentence Properties
I	Recognition of Word Meaning	Recognition of Word Meaning	Labeling	Labeling
J	Recall	Extraction*	Retelling	Writing from Dictation or Written Text
K	Comprehension	Comprehension	Comprehension and Interpretation through Oral Reading and/or Structured Speech	Comprehension and Interpretation through Structured Writing
L	Interpretation	Interpretation		
M			Creative Speech	Creative Writing

*Extraction if stimulus is present; Recall if it is removed.

-- how letters generally go together to make words--g-l-a-v-e looks like an English word while g-l-a-v-g does not. How do children come to make such discriminations? (There is very little specific teaching of formation rules outside of some coding schools for military intelligence officers.)

-- the operations performed on words to make them plural, possessive, past tense, negative, etc.

-- fine points of usage and diction, idioms. It must be very confusing to the beginning English speaker, for example, to hear a ladder referred to as "long" when it is lying on the ground and "tall" when it is leaning against a building; to look "up and down" before crossing streets; to find both books and milkshakes described as "thick."

-- agreement of subjects and predicates.

-- appropriate "cases" of pronouns.

-- word order, according to the conventions of the language.

-- the circumlocutions necessary to create forms that the language does not provide for in an orderly way--for example, the future tense in English.

-- conventions of punctuation and capitalization.

Such things have been the chief concerns of most psychologists who study language development and behavior. They have also been the favorite subject matter of most school language programs. Both the psychologists and the teachers have recognized a domain in which definitions can be given with somewhat greater precision and test items are a little easier to come by than for the more elusive interpretive and expressive skills.

The research concerns suggested by G and H are, of course, how does knowledge about the language relate to skill in the language? To what extent is a child's ability to discriminate between language forms important to his ability to communicate? Such questions are especially pertinent to the present international concern with low achieving, lower class, or ethnic minority children. In most cases the home language of these children can be characterized as "nonstandard" at best.

The chart then has suggested--or stimulated discussion of--four major areas of research into verbal development: the relationships between behaviors hypothesized to be associated with one of the four major language skills, the sequencing or ordering of behaviors within a skill, the relationships between behaviors associated with different skills, and the relationships between knowledge or understanding of language properties and verbal performance. The classical philosophical and psychological problem of the relationship between language and thought--or between inter-individual and intra-individual communication (Carroll, 1964)--has not been faced directly. However, the definition of "reading" implied by the chart certainly goes beyond "decoding"--and the definition of "writing" beyond a graphic skill. As soon as the researcher concerns himself with "interpretation" in listening and reading and with "creative" speech or writing, he has slipped into the language-thought arena.

Research, as viewed in this paper, is stoutly dependent on appropriate measurement of the behaviors of interest. As indicated earlier, there are relatively few reliable instruments to assess well-defined verbal skills at given early age levels (see, for example, Cazden, 1971). There is an even greater scarcity of conceptually or statistically sequential measures applicable across several age levels.

This state of affairs was brought strikingly home to me in 1968 when Educational Testing Service prepared to launch an ambitious longitudinal study of the personal, social, and cognitive development of children during the crucial period from age 3 to age 9. The scheme on which this paper is based was developed at that time, primarily as a guide to specification of verbal instruments for that study (Anderson et al., 1968). Table 2 demonstrates that it at least served that purpose. Note, however, that even after settling on a number of measures simply as "the best available," there were many cells left to fill. Measures that we felt had to be created especially for this study bear the labels of "Massad," "adapted," and "TAMA." Unfortunately it is not possible to compare the study results for these ad hoc instruments with any prior results obtained by other investigators.

The basic strategy for research on verbal development in young children that has been advocated here is, of course, not dependent on the particular scheme presented. Rather it is dependent on a scheme, adjusted to the logical disposition and language of the researchers. The important elements are illustrated here, however. They include:

-- A mapping of the entire verbal domain, so that results of researches in particular segments can be related to each other.

-- The use of the same scheme across investigators and situations where appropriate, to maximize understanding both of the phenomena under consideration and of the investigators by each other.

-- The development of reliable and longitudinal measures specific to the elements of the scheme.

Such an approach should not only enhance the comprehensiveness of our descriptions and explanations of verbal behavior but also might make somewhat

Table 2

VERBAL MEASURES

Verbal Skill*		3 1/2	4 1/2-5	5-6 (K)	6-7 (Grade 1)	7-8 (Grade 2)	8-9 (Grade 3)
Listening	A	Auditory Examination during "Medical"					
	C,D	Children's Auditory Discrimination Inventory		Wepman Auditory Discrimination			
	G	ETS Matched Pictures Comprehension			Cooperative Primary Word Analysis		
	H	ETS Matched Pictures Comprehension					
	I	Peabody Picture Vocab.		Metropolitan Readiness 1	Cooperative Primary Listening		
	J,K	ETS Story Sequence I		Metrop. R2 ETS V5	Cooperative Primary Listening		
	L			Metrop. R2 ETS V5	Cooperative Primary Listening		
Reading	A	Visual Examination during "Medical"					
	B	Johns Hopkins Perceptual Test					
	C,D			Metrop. R3	Cooperative Primary Word Analysis		
	G				Cooperative Primary Word Analysis	Coop.Pri.Writing Skills	
	H					Coop.Pri.Writing Skills	
	I,J,K,L				Cooperative Primary Reading		
List/Read	E			Metrop. R4			
Read/Speak	E			Harrison-Stroud 6			
	F				Gray Oral Reading		
Speaking	C,D	Massad Mimicry					
	G		ITPA Auditory-Vocal Automatic				
	H	Massad Mimicry, TAMA Tell-a-Story					
	I	Peabody Picture Vocab. (adapt.)					
	J	ETS Story Sequence II					
	K,L		ETS Story Sequence II		Gray Oral Reading		
	M	TAMA Tell-a-Story					
Writing	B	Developmental Test of Visual-Motor Integration					
	C			Metrop. R6	Clymer Sentence Copying		
	D				Clymer Sentence Copying		
	E,F,G					TAMA Sentence Dictation TAMA Write-a-Story	
	H					TAMA Completion A TAMA Write-a-Story	
	J					TAMA Sentence Dictation	
	K,L					TAMA Completion B	
	M					TAMA Write-a-Story	

*Letters correspond to skills listed in Table 1.

easier the job of eventually translating our knowledge into effective educational programming.

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