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ABSTRACT

The reading progress of 96 disadvantaged children from kindergarten through grade 3 was analyzed to determine rate and consistency of reading growth as estimated from several reading measures. Although steady growth was observed on all measures, rate and consistency varied with the type of reading measure used, as well as with the specific test series. The Metropolitan Achievement Tests and the New York Tests of Growth in Reading yielded consistently higher scores than did the two informal measures, the Harris Graded Word Lists, a measure of sight vocabulary, and the highest level of book used in the classroom. The New York Tests appeared to yield somewhat higher scores than did the Metropolitan Tests. Acceleration appeared greater in the first and second grades on the standardized measures and in the third grade on the informal measures. There was approximately a one grade discrepancy between the frustration level estimated by standardized tests and the instructional level estimated by informal measures. It was concluded that standardized test results seem best suited for assessing the achievement growth of individuals and groups, while informal measures are probably best suited for determining each child's functioning level and for selecting materials. Tables are included. (Author/DH)

Analyzing Reading Growth of Disadvantaged Children Through Longitudinal Study of Several Reading Measures

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Abstract

This study analyzed longitudinal data on 96 disadvantaged children from kindergarten through grade three from an individually-paced reading program, to determine rate and consistency of reading growth as estimated from several reading measures. Steady growth was observed on all measures. However, rate and consistency varied with type of reading measure used, as well as with specific test series.

The Metropolitan Achievement Tests and the New York Tests of Growth in Reading yielded consistently higher scores than did the two informal measures, the Harris Graded Word Lists, a measure of sight vocabulary, and the highest level of book used in the classroom. The New York Tests appeared to yield somewhat higher scores than did the Metropolitan Tests. Acceleration appeared greater in the first and second grades on the standardized measures and in the third grade on the informal measures. There was approximately a one grade discrepancy between the frustration level estimated by standardized tests and the instructional level estimated by informal measures.

Standardized test results seem best suited for assessing the achievement growth of individuals and groups, while informal measures

are probably best suited for determining each child's functioning level and for selecting materials. In summary, the several measures used to assess reading achievement should not be considered interchangeable, but rather as concomitants in the reading program.

ANALYZING READING GROWTH OF DISADVANTAGED CHILDREN THROUGH LONGITUDINAL STUDY OF SEVERAL READING MEASURES

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Introduction and Purpose

One recurring issue in education is how achievement is most appropriately measured for varying classroom purposes. In reading, a variety of measures is available, ranging from general measures of reading comprehension to measures of specific skills, from standardized tests to informal teacher appraisals. The results from different measures can be used for various purposes, such as placement of children in classes or groups, selection of appropriate materials for instruction, or assessment of rate and consistency of growth of individuals or groups. A number of questions can be raised about the use of different measures of reading achievement. This paper focused on the following questions:

1. To what extent do different measures give different results?
2. How should one interpret data from different measures which appear to give different results?
3. Which measures are best suited for each purpose?

The present study analyzed longitudinal data on several measures obtained in grades one, two and three from children in an individually-paced reading program, in order to compare results from different

measures with respect to rate and consistency of reading growth. The study also considered the usefulness of the measures in the context of that program.

The reading program from which the data of this study were obtained was developed at the John H. Finley School, a New York City public elementary school (P.S. 129 M) affiliated with the City College and located in a low-income area.[1] The cornerstone of the program is a system of individual pacing of instruction designed to allow each child to progress according to his developing ability and thus to experience success, as well to build a positive image of himself as a capable learner. There is extensive emphasis on oral language development and reading related to classroom experiences. The program stresses the importance of personal involvement by the child and emphasizes the development of independence in reading and of a sense of responsibility for learning. Extensive record keeping and frequent evaluation give information on progress for teacher and children. The involvement of parents is also an integral part of the program so that the child feels he has support from the home.

The reading program in the heterogeneous first-grade classes allows for each child to progress at his own rate through a structured sequence of books and experiences. Horizontal reinforcement, i.e.,

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[1]The program was initiated by Florence Kaiden Blitzer, reading coordinator, and Martha Froelich, principal, of P.S. 129. Their cooperation in providing data and consultation for this study is greatly appreciated.

reading a number of books at any one level, is provided to the extent that each child needs it before he moves to the higher level. For example, 13 books are available at the pre-primer level. Interclass groupings across the first grade provide opportunity for children who are reading at the same level to read together. In grades two and three, children are placed in homogeneous classes and pacing is done chiefly by classes rather than on a completely individualized basis. Throughout the primary grades, there is frequent individual evaluation of each child's progress on a number of measures. Regular conferences with teachers provide for the development of methods for coordination and for supervision.

Procedure

The subjects were 96 children from the Finley school which were all the children who had attended first grade in the school and who had remained in the school for the two succeeding years.

Measures used in the study included two standardized reading test series administered several times in grades one, two and three. The New York Tests of Growth in Reading of the appropriate levels were administered in June of grade one and in March and May of grade two. The Metropolitan Achievement Tests, also of the appropriate levels, were administered in October and June of grade two and in October and April of grade three.

A second type of measure was an adaptation of the Harris Sample Graded Word List. This measure consists of ten word lists at each

reading level from pre-primer to fifth grade. The school added an experiential level at the beginning. The Harris Graded Word List was administered individually at frequent intervals throughout the first three grades; scores were derived for each three-month period in grades one, two, and three, making a total of nine scores. Scores were cumulative in that the child was given credit for lower levels previously passed.

A third type of measure of reading achievement was the highest level book used from those available in the primary reading program, including basal readers, books in content areas and trade books. The books had been classified by the school into levels of difficulty coordinate with the basal reader levels. The levels ranged from pre-primer to fourth grade; a scale ranging from 1 to 11 was used for analysis. A score on the highest level of book used was obtained for each child at three-month intervals in grades one and two, and once in grade three, making a total of seven scores.

Results

Table 1 presents a summary of the results from the four measures for the various testing periods. Mean reading grade equivalents are given for the subtests of the New York Tests of Growth in Reading and the Metropolitan Achievement Tests. For the Harris Graded Word Lists and the highest level book used, the mean scale value was obtained, but Table 1 presents only the mean basal reader equivalents of those scores since the scales themselves have no standard referents.

Growth was observed on all measures for the time periods sampled. However, rate and consistency varied with the measure used. Comparison of standardized test scores to national norms suggested that rate of growth on these measures was most rapid in first grade, approximated normal rate in second grade, and slowed down in the third grade. Though pupils scored at high second-grade level at the end of first grade, they were reading only at mid-third-grade level toward the end of third grade.

Within this pattern there were slight differences in reading level between the two standardized reading tests. The Metropolitan Achievement Tests appeared more difficult than the New York Tests of Growth in Reading. For example, at the end of second grade pupils scored higher on paragraph meaning on the New York Tests of Growth in Reading than they did on reading comprehension on the Metropolitan Achievement Tests.

The Harris Word List showed a consistent increase in scores. This measure, unlike the reading achievement scores, did not show a first-grade spurt nor a slowing down in third grade. By the end of third grade the estimated reading level on the Harris List was the third reader.

The third indication of reading achievement, the highest level book used by each child in the classroom, also showed consistent increase in reading level over the three years. However, with this measure the biggest spurt appeared to take place in grade three. At the end of grade one the mean highest level book read was primer reading

level, compared to an expectation of first-reader level. At the end of grade two the children were almost ready to start the second reader level and in spring of grade three they were almost ready for the third reader.

Comparing across the various measures in the same time interval, it can be seen that at the end of grade one the results on the highest level book used were similar to the Harris List, both estimating reading achievement at primer level. This was in contrast to the Sentence Meaning score of 2.7 on the New York Tests of Growth in Reading in June of first grade, a score indicating the possibility of pupils being able to read much higher levels of books in the classroom.

At the end of grade two, according to the highest level book used, most students were ready to begin the second reading level, again a result similar to the Harris List estimate. According to both sets of standardized test scores, however, the expectation was that the children could read on third-reader level by this time.

By spring of third grade they were ready to begin the third reader, consistent with the Harris estimate but a lower estimate than obtained on the Metropolitan Test, which was at mid-third-grade level.

Discussion

With respect to the first question raised at the beginning of the paper, there were indeed differences among the several measures. The estimated achievement levels for the two standardized tests were

consistently higher than those for the informal measures. At the end of grade one the New York Growth in Reading scores indicated achievement levels of mid-second grade while both the Harris Graded Word List and Highest Level Book Used indicated that the students were working at the primer level. At the end of the second grade most of the New York Growth in Reading and Metropolitan Achievement Test scores were at mid-third grade level while the other two measures were at not-quite-second-grade level. In spring of third grade the mean Metropolitan Achievement Test scores were at mid-third grade level while the highest level book read and the Harris List results were at almost third grade level.

Concerning the interpretation of the differences found, the second question raised, first, it is possible that each measure may assess different reading skills, all of which may not have the same growth patterns. For example, the Harris List measures a specific sub-skill, sight vocabulary, while the other standardized tests include both specific and global reading skills which vary in complexity with different levels of the test.

Secondly, within the definitions of reading used for each measure, varying functional levels may be required of the child. Reading achievement tests traditionally measure frustration reading level, that is, the highest level reading possible for the child and the point at which many errors are made. Books used for instructional purposes in the classroom, however, tend to be at a lower level so as to enhance comprehension of what is read. In the Finley school program, the highest level book used was selected so that each child could read at a level comfortable to him

but with some challenge; this was considerably lower than his frustration level. The informal Harris List apparently taps the instructional reading level, perhaps reflecting the importance of sight vocabulary in initial reading instruction.

It is possible that differences in normative procedures on each of the measures may also account for score differences and lead to different interpretations of growth. It was noted that the Metropolitan Achievement Test appeared to be more difficult than the New York Tests of Growth in Reading.

Finally, with respect to question two, specific characteristics of individual measures may account for some of the differences. For example, by third grade there were evidently ceiling effects on the Harris List scores, since the highest level provided by this measure is only fifth grade. Similarly, the horizontal reinforcement and emphasis on comfortable independent reading may have functioned as a ceiling on the highest level book used in the classroom.

The third question raised concerned the appropriate use of the several measures for different purposes. Standardized test scores are probably best suited for measuring achievement growth of individuals and groups, but it should be noted that they may overestimate the child's actual functioning level in the classroom. Informal assessments are probably best used for determining the appropriate instructional level for each child and for choosing classroom materials. In the case of disadvantaged children it is particularly important to pace instruction so as to provide self-confidence and success in learning. One

caution, of course, is that sufficient challenge must be provided in reading instruction to insure that children continue to progress commensurate with their ability.

In conclusion, the several measures used in the study should not be considered as interchangeable. Each may serve a different function in the assessment of school achievement and in the planning of educational programs.

Table 1

Mean Reading Levels as Estimated from Various Measures at Selected Intervals, Grades 1, 2 and 3 (N = 96)[a]

Grade Level and Time	Mean Grade Equivalents		Mean Reader Level	
	New York Tests of Growth in Reading[b]	Metropolitan Achievement Test[b]	Harris Sample Graded Word List[c]	Highest Level Book Used[c]
Grade One				
December 1964			Experiential	Pre-primer 1 and 2
March 1965			Pre-primer	Pre-primer 3
June 1965	Words 2.29 (.59)[d] Phrases 2.59 (.49) Sentences 2.73 (.45)		Primer	Primer
Grade Two				
October 1965		Reading 2.05 (.77) Word Knowledge 1.98 (.56)		
December 1965			First Reader	First Reader
March 1966	Words 3.28 (.27) Phrases 3.23 (.36) Sentences 3.33 (.32)		Mid-First Reader	Almost Second Reader

Table 1 (continued)

Grade Level and Time	Mean Grade Equivalents: New York Tests of Growth in Reading[b]	Mean Grade Equivalents: Metropolitan Achievement Test[b]	Mean Reader Level: Harris Sample Graded Word List[c]	Mean Reader Level: Highest Level Book Used[c]
May-June 1966	Sentences 3.39 (.73) Words 3.55 (.68) Paragraphs 3.44 (.60)	Reading 3.03 (.81) Word Knowledge 3.52 (1.19)	Almost Second Reader	Almost Second Reader
Grade Three				
October 1966		Reading 2.95 (.80) Word Knowledge 3.15 (1.05)		
December 1966			Second Reader	
March-April 1967		Reading 3.57 (.95) Word Knowledge 3.56 (1.24)	Almost Third Reader	Almost Third Reader
June 1967			Third Reader	

[a]The N varied by test because of absences on the day of testing.

[b]The appropriate level of test was given each testing.

[c]Reading level estimate is given rather than mean score.

[d]The standard deviation is given in the parenthesis.