DOCUMENT RESUME

ED 124 576 TM 005 330

AUTHOR Rasp, Alfred, Jr.; Stiles, Richard
TITLE Using the Anchor Test Study in State Assessment.
PUB DATE [Apr 76]
NOTE 9p.; Paper presented at the Annual Meeting of the American Educational Research Association (60th, San Francisco, California, April 19-23, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Comparative Testing; *Educational Assessment; Equated Scores; Feasibility Studies; Intermediate Grades; *Norms; *Reading Achievement; Reading Tests; School Districts; Standardized Tests; *State Programs
IDENTIFIERS Anchor Test Study; *Washington State Educational Assessment Program

ABSTRACT

A report is given on two years' experience in using the Anchor Test Study (ATS) norms, developed by the Educational Testing Service under contract to the U.S. Office of Education as part of the Washington State Assessment program. In the first year, the desire to develop a state reading achievement profile through the application of the ATS norm tables was incorporated into the Washington State ESEA Title III needs assessment plan for fiscal year 1974. A 20% sample of schools containing grade 6 was drawn and attempts made to collect sixth-grade test data compatible with the ATS tables. The data were tabulated and reported as total reading mean scores and standard deviations for the state as a whole and for ten categories based on district size. Because of sampling and data collection problems, changes were made in the second year's endeavor. All districts using tests covered by the ATS norms were given the opportunity to contribute data. No attempt was made to generalize beyond the population supplying test results, but the analysis was expanded to include the reading subtests and grades 4 and 5 as well as grade 6. (Author)

USING THE ANCHOR TEST STUDY IN STATE ASSESSMENT

Alfred Kasp, Jr.
Director
Program Evaluation and Research
Superintendent of Public Instruction
Olympia, Washington

Richard Stiles
Evaluation Consultant
Office Of Program Evaluation and Research
California State Department of Education
Sacramento, California

Abstract

This paper reports on two years' experience in using the Anchor Test Study (ATS) norms, developed by Educational Testing Service under contract to the U. S. Office of Education, as part of the Washington State Assessment program. In the first year, the desire to develop a state reading achievement profile through the application of the ATS norm tables was incorporated into the Washington State ESEA Title III needs assessment plan for fiscal year 1974. The support for this style of assessment rested on both the interest in generating a description of the reading performance of Washington pupils and on the interest in studying the feasibility of using the ATS norms and local school district test data as the basis for constructing a state profile of reading achievement. A twenty percent sample of schools containing grade six was drawn and attempts made to collect sixth grade test data compatible with the ATS tables. The resulting data were tabulated and reported in the form of total reading mean scores and standard deviations for the state as a whole and for ten categories based on district size.

Because of the sampling and data collection problems encountered in the first application of the Anchor Test Study, changes were made in the second year's endeavor. Rather than attempting to achieve a representative state profile of reading achievement for one grade level, based on a random sample, all districts using tests covered by the ATS norms were given the opportunity to contribute data. No attempt was made to generalize beyond the population supplying test results, but the analysis was expanded to include the reading sub-tests and grades four and five as well as grade six.

ASSESSING READING ACHIEVEMENT USING THE ANCHOR TEST STUDY

PART I

The desire to develop a state reading achievement profile through the application of the ATS tables was incorporated into the Washington State ESEA Title III Needs Assessment Plan for fiscal year 1974. The support for this style of assessment rested on both the interest in generating a description of the reading performance of Washington pupils and on the interest in the feasibility of using the ATS norm tables and local school district data as the basis for constructing a state profile of reading achievement. A listing of the tests included in the complete tables is given below.

Test edition	Form	Level used at grade		
		4	5	6
Calif Achievement Tests (1970 ed)	A	3	3	4
Comprehensive Tests of Basic Skills (1968 ed)	Q	2	2	3
Gates MacGinitie Reading Tests (1964 ed)	1M	Survey D	Survey D	Survey D
Iowa Tests of Basic Skills (1971 ed)	5	10	11	12
Metropolitan Achievement Tests (1970 ed)	F	Elementary	Intermediate	Intermediate
Sequential Tests of Educational Progress, STEP Series II (1969 ed)	A	4	4	4
SRA Achievement Series (1971 ed)	E	Blue edition	Blue edition	Green edition
Stanford Achievement Tests (1964 ed)	W	Intermediate I	Intermediate II	Intermediate II

When the Anchor Test Study Users Manual (unofficial version not including the Gates-MacGinitie) became available to the Washington Superintendent of Public Instruction in the fall of 1973, the implementation of

the plan began. State "files" were inspected to determine the availability of information regarding local school district use of standardized tests. Since no systematic records existed, a questionnaire (Anchor Test Profile Survey) was prepared and sent to each school district to collect information related to their use of the tests included in the ATS tables.

This instrument was returned by approximately 80% of the local school districts and served as the basis for two decisions. First, grade six was selected for analysis because more of the ATS tests were administered at that grade than at the fourth grade or the fifth. Second, the data were used to check the feasibility of the sample units drawn and to indicate where alternatives would be required.

In an effort to generalize to the state as a whole and to ten size categories a stratified random sample was designed. Each common school containing grade six was assigned to one of ten categories based on total district enrollment. Using the school as the sample unit, 20% were drawn randomly from each size category. An additional 10% sample of schools was drawn to provide alternates. As the selected schools from the 20% drawing were compared with the results of the questionnaire, the alternates were used to fill in for those schools located in districts in which the testing programs were not compatible with the Anchor Test Tables or in districts which did not return the questionnaire. In an effort to maintain the number of schools required in each size category for a 20% sample, the majority of the alternates were used. In two instances, all of the alternates were substituted for original selections.

Requests were sent to the school districts for the raw scores of sixth grade students attending the sample schools. The data submitted by the school districts were studied and forwarded to the Northwest Regional Educational Laboratory for tabulation. Three circumstances became apparent. First, several districts did not complete the Anchor Test Profile Survey accurately and did not possess the information as claimed. Second, the test results were submitted in a greater variety of forms than anticipated, especially with reference to the style of reporting; for example, percentiles, stanines, grade equivalencies, growth scores, as well as raw scores were reported and the time of test administration covered every month from September to June. Third, it would be impossible to maintain a 20% random sample in each of the ten size categories as a basis for generalization. (See the table below for the actual sample and number of schools and students included in the study.)

District Size and Sample Size Used in the Anchor Test Study Data Collection Effort

Stratum Code	District Size	Number of Schools in Sample	Percent in Sample[a]	Number of Students
a	20,000 and over	23	10.2	1747
b	10,000 - 19,999	17	10.5	1469
c	5,000 - 9,999	15	10.6	951
d	3,000 - 4,999	6	7.7	856
e	2,000 - 2,999	5	10.4	764
f	1,000 - 1,999	5	8.5	252
g	700 - 999	4	11.8	229
h	500 - 699	3	10.7	149
i	300 - 499	3	7.1	85
j	under 300	6	6.5	66
TOTALS		87		6568

Note.--District and School Size estimates were based on 1972 School Census data for the State of Washington.

The problems of data analysis were greatly increased in an effort to maintain some semblance of a random sample, and in many instances precision in dealing with the lack of compatibility in test forms, levels, editions and in time of test administration suffered as a consequence. The issue of sampling and the power to generalize is crucial in this day of full disclosure when both the public and the press demand access to information regardless of its quality or of the assumptions violated by generalizing.

Although the 1973-74 study resulted in a somewhat limited description of reading performance, the activities did lead to a successful feasibility study highlighting a number of trouble spots and pitfalls to guard against. The results of the reading assessment are displayed in the following table.

Estimated State and Strata Means and Standard Deviations for Six Standardized Tests. Grade Six Total Reading Scores, Spring 1972

Stratum Code	Standardized Reading Tests					
	CTBS	ITBS	MAT	SAT	SRA	STEP II
a	46.4 6.6	61.6 8.9	63.5 7.6	62.3 8.8	53.6 7.9	42.1 4.5
b	43.1 7.8	57.0 10.6	60.0 9.2	57.8 10.6	49.7 9.6	40.1 5.6
c	49.6 4.9	65.8 6.8	67.3 5.2	66.6 6.5	57.4 5.7	44.4 3.0
d	48.9 4.9	64.7 7.2	66.0 5.3	65.0 6.6	55.6 5.5	43.4 2.7
e	52.9 7.1	70.7 10.2	70.5 6.9	70.9 9.4	61.0 8.1	46.2 4.0
f	46.6 4.6	61.9 6.4	64.2 5.3	62.6 6.2	54.5 5.6	42.5 3.1
g	43.6 8.2	58.3 11.7	60.9 9.6	59.4 12.0	50.5 10.3	40.6 5.7
h	46.4 3.3	61.4 4.5	64.0 3.6	62.2 4.3	53.4 4.4	43.1 0.9
i	41.9 17.7	55.8 22.9	57.4 23.1	50.2 18.5	46.2 23.7	38.3 14.2
j	50.2 8.4	67.1 11.6	67.5 9.8	66.5 10.7	58.4 9.9	44.9 6.8
State (All Schools)	47.0 7.4	62.4 10.1	64.1 8.6	62.4 9.4	55.0 9.1	42.6 5.1

Note.--First number represents the mean. Second number represents the standard deviation.

CAT state and stratum means can be estimated from the data using Educational Testing Service equivalency tables. The CAT means for strata a-j and the state respectively are approximately as follows: 44, 40.5, 46.5, 45.5, 50, 44, 41, 44, 39, 47, and 44.

PART II

The findings of the first study were sufficient to encourage the further use of the ATS tables on the state level, and it was decided to design a second study pursuing a different approach. In order to gain a more complete description of district testing activities, an addendum page was added to the basic program report submitted by all districts in order to qualify for general state education funds. In this way a profile of each district's standardized testing program was obtained as a more accurate starting point for decision making. This information revealed that if both fall and spring testing were included, that at any one grade level less than one-third of the districts administered an ATS test in a form compatible with the tables, and less than one-half of the districts administered a usable test if all three of the grade levels were considered together.

This analysis, added to the findings of the feasibility study, curtailed all attempts to design and draw a random sample. Instead, all districts reporting a compatible testing program were asked to voluntarily submit student raw scores for inclusion in the calculation of "norms" in the form of means and standard deviations for each of the tests. The merit of this activity is in providing a service to local school districts. Since there is no way of guaranteeing the representativeness of the districts and schools submitting scores, there is no way of generalizing with confidence to a state profile at each grade level. The norms created will be norms for educational units making use of one of the eight ATS tests rather than true state norms in the traditional sense. This endeavor takes on an added dimension, however, when it is noted that although less than 50% of the districts use appropriate Anchor Tests, they provide education for the vast majority of children in

the State of Washington. The goal is to make it possible for districts using any of the Anchor Tests to compare their results with the norms established by all districts administering the tests and to aggregate achievement data generated from the use of more than one of the tests included in the Anchor Study.

To implement this second phase endeavor, major emphasis was placed on the development of computer programs to facilitate the use of the ATS tables for both state and local assessment purposes. The Northwest Lab was contracted to assist in developing the computer programs to provide score transformation among the eight tests and conversion between fall, winter, and spring norms. The resulting programs accomplished three key purposes. First, the ATS equivalency tables were computerized so that test scores can be equated with speed. However, since the original ATS tables report only raw scores and spring norms, they are of limited use for large scale assessments based on existing data. To provide greater flexibility, two additional steps were taken. Second, tables were developed and programmed to convert fall and winter testing times to spring norms. Third, tables were also programmed to convert the standard reporting options, for example, grade equivalent scores, percentiles, and scale scores, to raw scores.

These programs increase the practical utility of the original ATS accomplishments. The Northwest Lab used the following example to summarize the usefulness.

> For example, School A may report grade equivalent scores from Fall testing with the California Achievement Tests, while School B reports raw scores for the same time and test. School C may use Spring percentiles from the Iowa Tests of Basic Skills, while School D has Spring raw scores for the Stanford Achievement Tests. By using the Anchor Test Program, these schools can now communicate meaningfully with each other about these test scores.

Efforts are now underway to make the Anchor Test Program available to those Washington school districts and other common school district agencies having computer installations.

The availability of the ATS tables, norms for schools using "Anchor Tests," computer programs for ease of conversion, and state technical reports and experience should encourage district personnel to give greater attention to the use of reading achievement data in local assessments and program evaluations. The state experience should also encourage local personnel to give special consideration to the flexibility provided by the original ATS norm tables and the Anchor Test computer programs without losing the ability to aggregate scores across projects.

References

Loret, P., Seder, A., Bianchini, J. and Vale, C. Anchor Test Study -- Equivalence and Norms Tables for Selected Reading Achievement Tests. Washington, D.C.: U.S. Government Printing Office, 1974.

Washington Statewide Assessment Using Anchor Test Norms: Total Reading, Grade Six, Technical Report. Superintendent of Public Instruction: Olympia, Washington, 1974.*

User's Guide to the Anchor Test Program. Superintendent of Public Instruction: Olympia, Washington, 1975.*

*for copies of these materials contact:

Dr. Alfred Rasp, Jr.
Director, Program Evaluation and Research
Superintendent of Public Instruction
Old Capitol Building
Olympia, WA 98504