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ABSTRACT

An examination of statewide testing program results for New Mexico are presented under the following headings: (1) Assessment of Mental Abilities, School Year 1972-73, Grade 1; (2) Assessment of Academic Aptitude and Achievement, School Year 1972-73, Grade 5; (3) Assessment of Academic Aptitude and Achievement, School Year 1972-73, Grade 8; and (4) ACT Report, February 1973. Conclusions include: (1) the New Mexico statewide first grade mean mental ability score is significantly lower than the national norm; (2) the statewide achievement mean for New Mexico fifth graders is significantly lower than the national norm; (3) eighth-grade achievement scores are significantly lower than the national norm; and (4) Anglo students are over-represented in percent of college-bound students, and Spanish-American students are under-represented. (CK)

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ANALYSIS OF STATEWIDE  
TESTING PROGRAM RESULTS  
1972-1973

GRADES 1, 5, AND 8  
and  
ACT REPORT 1973

EVALUATION UNIT  
STATE DEPARTMENT OF EDUCATION  
SANTA FE, NEW MEXICO  
MARCH 1973

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ASSESSMENT OF MENTAL ABILITIES

SCHOOL YEAR 1972-73

GRADE I

ASSESSMENT OF MENTAL ABILITIES  
OF GRADE ONE, SCHOOL YEAR 1972-73

In designing the evaluation scheme to which the Department of Education has committed itself, a critical consideration was that of making a valid assessment of the starting point of education in the state. Since the establishment of a base line was felt to be crucial in the evaluation scheme, the assessment of the mental abilities of the total first grade population of the state appeared to be the logical first step. If the starting point could be determined, then subsequent curricular activity and emphasis could thereby be planned in a more objective manner.

Accordingly, the Otis-Lennon Mental Ability Test, Primary II, Form J, was administered initially to the entire first grade population in October 1971 and the results reported. This year's (1972-73) state-wide test of the first grade children is a replication of previous testing -- the same test administered in the same month under the same conditions.

PROCEDURE: Each district was asked to assign a test coordinator for the district through whom test-related communications could be channeled from the Department of Education. Much effort was made to keep all affected levels of the school informed. All testing was completed during October 1972. The children's teachers administered the tests according to specific instructions provided them in the manual for administration. The completed tests were then sent to the Department of Education for preliminary checking, and from there to the test company for scoring and for making the desired statistical analyses.

STATISTICAL TREATMENT: The answer sheet of each student was coded to indicate the name, date of birth, sex, ethnic background, school, district, size of district, and name of teacher. Printouts were obtained for the school and the State Department of Education showing test results in percentiles and raw scores by class in alphabetical order by student's last name. The district also was provided a class mean by school and a mean for the entire district. In addition, the State Department of Education has means by ethnic group for public and non-public schools as well as statewide summaries. Tests of the significance of the difference between means of the various groups were applied at the .01 level using the following formula:

$$T = \frac{M_1 - M_2}{\sqrt{(\sigma_{M_1})^2 + (\sigma_{M_2})^2}} \text{ WHERE } \sigma_{M_1} = \frac{\sigma_1}{\sqrt{N_1 - 1}} \text{ AND } \sigma_{M_2} = \frac{\sigma_2}{\sqrt{N_2 - 1}}$$

RESULTS: The results of the first grade mental abilities testing are shown in tabular form in Tables I, II and III and are visually represented in Graph A. As Table I shows, the statewide mean of all students taking the test (21,244) is 97.6 which is 2.4 points below the national norm of 100.0, a statistically significant difference. Table I also shows the means of each group tested and the number of children in each of the groups both for public and non-public schools. The final section is the statewide totals for each group (public plus non-public) for the entire first grade population of the state.

Table II is a matrix which shows various groups and whether the comparison of mental ability means is different enough to be significant. For instance, reading from Table II, we can see that the

"Anglo" mean is 105.2 and the Spanish mean is 92.7. This is a statistically significant difference and is so indicated in the row "Spanish" and the column "Anglo". Only one mean comparison was statistically not significant: the mean "Other/National".

In Table III, which compares the scores for 1971-72 and 1972-73, it is interesting to note that Spanish surnamed students taking the test in 1972-73 scored 2.7 above the 1971-72 group (92.7 - 90.0). This could be attributed to the fact that these are two different populations. However, in the October 1972 testing, 298 first graders in 20 districts were administered the test using a Spanish language translation of the directions which had been prepared by the test publisher. Those tests were scored separately and the mean for that group was 84.0. It is possible that this, too, might account for the difference.

TABLE I  
NEW MEXICO SCHOOLS

GRADE ONE, SCHOOL YEAR 1972-73  
ACADEMIC APTITUDE SUMMARY\*

ETHNIC TYPE	PUBLIC SCHOOLS		NON-PUBLIC SCHOOLS		STATEWIDE	
	MEAN SCORE	NUMBER TESTED	MEAN SCORE	NUMBER TESTED	MEAN SCORE	NUMBER TESTED
ANGLO	104.7	9,168	110.3	440	105.2	9,608
SPANISH	92.3	8,597	99.5	601	92.7	9,198
INDIAN	84.9	1,607	86.0	180	85.1	1,787
NEGRO	90.0	498	98.5	19	90.3	517
OTHER	101.1	118	99.2	16	100.8	134
NEW MEXICO	97.3	19,988	101.2	1,256	97.6	21,244

\*Grade One children in public and non-public schools were tested with the Otis-Lennon Mental Ability Test in October 1972

DEPARTMENT OF EDUCATION  
SANTA FE, NEW MEXICO 87501  
FEBRUARY 1972

TABLE II

SIGNIFICANCE OF DIFFERENCES BETWEEN  
GROUP MEANS ON FIRST GRADE  
OTIS-LENNON MENTAL ABILITY TEST\*

MEAN	GROUP	ANGLO	SPANISH	INDIAN	NEGRO	OTHER	NEW MEXICO
105.2	ANGLO						
92.7	SPANISH	S					
85.1	INDIAN	S	S				
90.3	NEGRO	S	S	S			
100.8	OTHER	S	S	S	S		
97.6	N.M.	S	S	S	S	S	
100.0	NATIONAL	S	S	S	S	NS	S

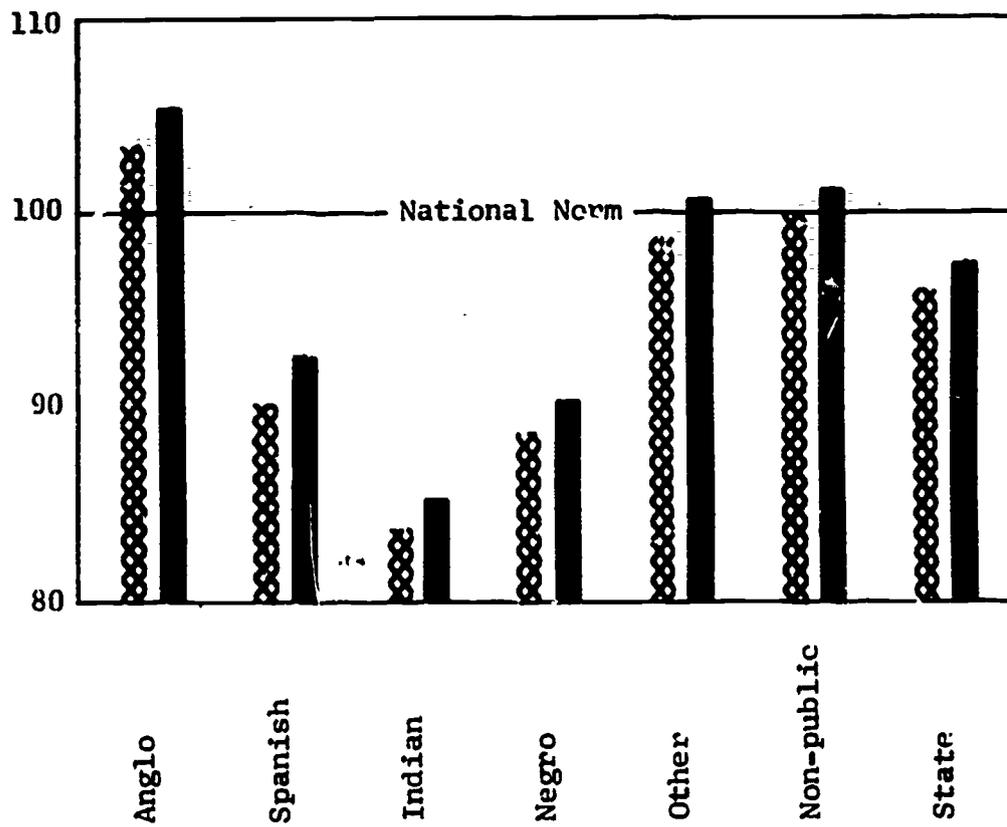
\* "S" indicates a significant difference exists between the means of the groups compared; "NS" indicates no significant difference.

TABLE III

COMPARISON OF MEAN TEST SCORES ON OTIS-LENNON  
 MENTAL ABILITY TEST FOR  
 1971-72 AND 1972-73  
 BY ETHNIC GROUP

<u>GROUP</u>	<u>SCORE 1971-72</u>	<u>SCORE 1972-73</u>
ANGLO	103.9	105.2
SPANISH	90.0	92.7
INDIAN	83.6	85.1
NEGRO	89.8	90.3
OTHER	98.9	100.8
NON-PUBLIC	100.0	101.2
PUBLIC	95.7	97.3
TOTAL STATE	96.0	97.6
NATIONAL	100.0	100.0

GRAPH A  
 OLMAT MEAN SCORES BY ETHNIC GROUP



School Year 1971-72 

School Year 1972-73 

CONCLUSIONS: 1. The New Mexico statewide first grade mean mental ability score of 97.6 is slightly, but significantly, lower than that of the national norm of 100. However, 97.6 is probably not enough below the expected norm to be of great concern in the development of an educational program, since this falls within the standard error of six age deviation points for pupils aged 5-9.

2. The Anglo group scored slightly above the national norm, but the difference is statistically significant.

3. The Spanish, Negro and Indian groups scored significantly lower than the national norm, and the low means of these groups should be considered as an important educational problem if the skills measured by the OLMAT are essential to success in school.

4. The mean score of the "Other" group was not significantly different from the national norm.

5. All sub-group means differed significantly from each other; that is, each sub-group scored significantly higher or lower than all other sub-groups.

6. Three distinct populations of mental ability are apparent in the test results, divided roughly along the ethnic lines of Anglo, Spanish and Indian. The Negro students' mean score is roughly the same as the Spanish and "Other" ethnic types score about the same as the Anglo group.

7. According to the OLMAT results, Spanish, Indian and Negro children begin their schooling at a distinct disadvantage to the Anglo and "Other" children in terms of their entering-school experiences which are apparently important to success in the general academic curriculum.

8. Children enrolled in the non-public schools score significantly higher than those in public schools, both statewide and in all of the ethnic groups. Non-public school children also score significantly higher than the national norm.

RECOMMENDATIONS: 1. Greater and more specific effort should be expended to enrich the educational experiences of minority group and bilingual children at the pre-first level and especially during the first year of school. Somehow, the educational gap which exists from the first day of school between the minority group children and children of the dominant culture must be closed. This gap exists at present in all of the grades tested, beginning with the first grade.

2. The statewide test of first grade mental abilities has established a baseline, the beginning point, for various groups in our public schools. The conclusions reached from an analysis of the first testing remain unchanged after analyzing the second testing. Although scores were slightly higher in the second testing, the vast disparity among the sub-groups still remains virtually the same.

3. The trend toward providing pre-school experiences constitutes a significant change in existing conditions, and continued testing with the same, or similar, instruments, once the early childhood program is implemented, should provide valuable data on the effectiveness of the various objectives and approaches that may be devised.

March 1973

ASSESSMENT OF ACADEMIC APTITUDE  
AND ACHIEVEMENT, SCHOOL YEAR 1972-73  
GRADE 5

ASSESSMENT OF ACADEMIC APTITUDE  
AND ACHIEVEMENT, SCHOOL YEAR 1972-73  
GRADE FIVE

Four years of data now are available for the fifth grade both in achievement and academic aptitude, school years 1969-70, 70-71, 71-72 and 72-73. The Comprehensive Tests of Basic Skills (CTBS) were used in all years to assess achievement of the fifth grade students. In the sampling conducted during school years 1969-70 and 70-71, the California Test of Mental Maturity (CTMM) was used to assess academic aptitude. The publisher revised and re-named the test the California Short Form Test of Academic Aptitude (SFTAA), and this test was used during school years 1971-72 and 72-73.

ACHIEVEMENT TEST: The rationale used in the development of the CTBS required that the tests measure systematically those skills prerequisite to studying and learning in subject-matter courses. The tests were developed for national use by students who have been taught by different methods and different curriculums. The tests aim to measure those skills common to all curriculums and needed for success in using language and number skills in any school. Each student was administered tests in four basic skills areas including Reading, Language, Arithmetic and Study Skills. The entire achievement battery required approximately four hours to complete.

APTITUDE TEST: The CTMM and SFTAA are similar types of tests developed to assess the level of intellectual development attained by the student and to predict his potential rate of progress and level of success in school. The SFTAA was standardized by administration of the test to a national sample of 197,000 students and

stratified by geographic region, enrollment size of district and by public and non-public school. The entire test is usually administered in one school period of 45 minutes' duration.

PROCEDURE: Each district was asked to assign a test coordinator for the district through whom test-related communications could be channeled from the Department of Education. All testing of all fifth grade students was completed during October 1972. Tests were administered according to precise instructions provided in the manual and in the pre-test workshops which were conducted within each district prior to the testing date. The completed tests were then sent by the local district to the Department of Education for preliminary checking. From there, the answer sheets were sent to the test scoring service.

STATISTICAL TREATMENT: The answer sheet for each student was coded to indicate the name, date of birth, sex, ethnic background, school, district, size of district and name of teacher. Score printouts were obtained for the school, the local district and the Department of Education showing test results in percentiles and standard scores for the SFTAA and grade equivalents - both anticipated and obtained - for the school by district and for the state as a whole. State means for ethnic groups and for district size were computed for the Department of Education.

RESULTS: The results of the fifth grade testing are shown in tabular form in Tables I, II, III, IV and V.

Table I gives a summary of most of the data of statewide application, including achievement and academic aptitude means by ethnic group and district size, as well as for the non-public schools and the state and national norms.

The data in Table I corroborate findings of previous years and in other grades about ethnic sub-group scores in achievement; namely, that the Anglo group scores highest and above the national norm, followed by Spanish, Negro and Indian groups in that order. However, the range is wide within each of these groups with some students scoring well above the mean in each category. Means in schools from districts over 5,000 enrollment tend to be higher than those in smaller districts. The achievement mean for children attending non-public schools is 5.0, approximately the expected score, and their academic aptitude score is 101 (one point above the expected score of 100). The mean grade equivalent score of all fifth grade children taking the test this year is 4.7, significantly lower than the expected 5.1.

Table II is a four-year comparison of achievement scores for the fifth grade which shows a strong consistency of mean scores for the various groups and the state totals in the four years tested.

Table III is a three-year comparison of academic aptitude mean scores. The 1971-72 means are in most instances about 5 or 6 points below those of the previous two years. This is attributed to the change from CTMM to SFTAA rather than to a difference in populations. Table IV indicates that all means in the academic aptitude test differ significantly from each other. Scores on the academic aptitude test by ethnic group and district size for 1972-73 were not included in this year's reports.

Test results show that 2,600 fifth grade children scored in the high ability category, while at the other end of the scale, 5,986 children scored in the low ability range (See Table V).

It is interesting to note that those students at, and below, the 17th percentile are performing close to their anticipated level, while the greatest discrepancy between anticipated and actual scores occurs in the group at, and above, the 83rd percentile.

NEW MEXICO SCHOOLS  
TABLE I  
GRADE FIVE, SCHOOL YEAR 1972-73

ACHIEVEMENT AND ACADEMIC APTITUDE TEST SUMMARY\*

GROUP	NUMBER TESTED	ACHIEVEMENT MEANS				STUDY SKILLS	TOTAL	ACADEMIC APTITUDE MEANS		
		READING	LANG	ARITH	TOTAL			LANGUAGE	NON-LANGUAGE	TOTAL
ANGLO	10,538	5.7	5.4	5.1	5.7	5.3				
SPANISH	9,537	4.3	4.3	4.3	4.4	4.3				
INDIAN	1,878	3.6	3.8	3.9	3.8	3.8				
NEGRO	391	4.0	4.1	4.1	4.2	4.1				
OTHER	369	5.5	5.3	5.0	5.5	5.1				
SIZE 1-500	764	4.9	4.9	4.7	4.9	4.8				
SIZE 501-1000	991	4.7	4.6	4.5	4.7	4.5				
SIZE 1001-5000	6,486	4.6	4.6	4.6	4.6	4.6				
SIZE OVER 5000	14,472	5.0	4.8	4.8	5.1	4.8				
NON-PUBLIC	1,247	5.2	5.1	4.9	5.1	5.0	99	100	99	99
PUBLIC	22,713	4.7	4.6	4.6	4.8	4.6	96	97	96	96
STATE	23,960	4.7	4.6	4.6	4.8	4.6	96	97	96	96
NATIONAL	---	5.1	5.1	5.1	5.1	5.1	100	100	100	100

\* Grade five children in public and non-public schools were tested with Comprehensive Tests of Basic Skills and the California Short Form Test of Academic Aptitude in October 1972

DEPARTMENT OF EDUCATION  
SANTA FE, NM 87501  
January, 1973

NEW MEXICO SCHOOLS

TABLE II

GRADE 5  
TOTAL ACHIEVEMENT MEANS BY GROUPS FOR FOUR YEARS

GROUP	<u>Mean Grade Eq. Score 1969-70</u>	<u>Mean Grade Eq. Score 1970-71</u>	<u>Mean Grade Eq. Score 1971-72</u>	<u>Mean Grade Eq. Score 1972-73</u>
ANGLO	5.5	5.5	5.3	5.3
SPANISH	4.3	4.3	4.3	4.3
INDIAN	3.7	3.9	3.8	3.8
NEGRO	3.9	4.2	4.1	4.1
OTHER	4.3	4.1	5.0	5.1
1-500	4.3	4.8	4.6	4.8
501-1000	4.1	4.3	4.5	4.5
1001-5000	4.8	4.6	4.6	4.6
Over 5000	4.8	5.1	4.8	4.8
Non-Public	NA	5.6	5.1	5.0
State	4.9	4.9	4.7	4.6
National	5.1	5.1	5.1	5.1

NEW MEXICO SCHOOLS

TABLE III

GRADE 5 ~

ACADEMIC APTITUDE SCORES BY GROUPS FOR THREE YEARS\*

<u>GROUP</u>	<u>SCORE</u> <u>1969-70</u>	<u>SCORE</u> <u>1970-71</u>	<u>SCORE</u> <u>1971-72</u>
ANGLO	111	109	103
SPANISH	96	95	91
INDIAN	92	91	85
NEGRO	92	93	89
OTHER	103	104	98
NON-PUBLIC	NA	108	101
STATE	102	102	96
NATIONAL	100	100	100

\* Academic aptitude scores for ethnic groups were not provided for school year 1972-73.

NEW MEXICO SCHOOLS

TABLE IV

SIGNIFICANCE OF DIFFERENCES BETWEEN  
GROUP MEANS ON GRADE FIVE  
ACADEMIC ABILITIES TEST  
SCHOOL YEAR 1971-72\*

MEAN	GROUP	ANGLO	SPANISH	INDIAN	NEGRO	OTHER	NEW MEXICO
103	Anglo						
91	Spanish	S					
85	Indian	S	S				
89	Negro	S	S	S			
98	Other	S	S	S	S		
96	New Mexico	S	S	S	S	S	
100	National	S	S	S	S	S	S

\* S denotes statistically significant differences

TABLE V  
STATEWIDE TESTING PROGRAM  
STATE MEANS - OCTOBER 1972

GRADE 5  
Comprehensive Tests of Basic Skills and Short Form Test of Academic Aptitude

APTTITUDE	I	NL	Total	READING			LANGUAGE			ARITHMETIC			BATTERY			STUDY SKILLS		
				VOC	COMP	TOTAL	MECH	EXPRES	SPL	TOTAL	COMP	CON	APPLI	TOTAL	REF	GRAPH	TOTAL	
TOTAL STATE	95.9	96.0	96.0	4.7	4.7	4.7	4.6	4.7	4.6	4.6	4.6	4.6	4.7	4.9	4.6	4.7	4.9	4.8
N =			23,960	0	+1.1	0	-2	+1	-2	-2	-2	-2	0	-1	-1	-1	+1	+1
PUBLIC	95.7	96.8	95.8	4.7	4.7	4.7	4.5	4.6	4.7	4.6	4.6	4.6	4.7	4.9	4.6	4.7	4.8	4.8
N =			22,713	+1	+1	+1	-3	0	-2	-1	-2	-2	0	-1	-1	-1	+1	+1
NON-PUBLIC	98.7	99.7	99.2	5.1	5.1	5.2	5.0	5.3	5.1	5.1	5.1	4.9	5.2	4.9	5.0	4.9	5.2	5.1
N =			1,247	+1	+2	+2	-1	+3	0	+1	+1	-1	+2	0	0	-2	+2	+1
<u>NATIONAL PERCENTILE</u>																		
83 AND ABOVE			OGE	7.4	8.6	7.8	7.0	8.5	6.9	7.2	5.7	7.1	7.0	6.3	6.8	7.3	7.7	7.5
N = 2,600			DIFF	.0	+4	+1	-5	+2	.0	-3	-6	-2	-5	-6	-4	.0	+1	.0
40 TO 60			OGE	5.0	5.1	5.1	4.9	5.1	5.0	4.9	4.7	5.0	4.8	4.8	4.9	5.0	5.2	5.1
N = 4,604			DIFF	+2	+3	+3	-1	+3	.0	-1	-4	.0	-1	-2	-1	.0	+2	+1
17 AND BELOW			OGE	3.3	3.2	3.2	3.3	3.1	3.2	3.2	3.8	3.3	3.3	3.5	3.4	3.4	3.4	3.3
N = 5,986			DIFF	.0	.0	.0	-1	.0	-3	-1	-2	.0	.0	-1	.0	.0	+1	.0
ETHNIC GROUP	ANGLO		OGE	5.6	5.9	5.7	5.5	6.0	5.2	5.4	4.9	5.5	5.3	5.1	5.3	5.6	5.9	5.7
	SPANISH		OGE	4.2	4.3	4.3	4.4	4.3	4.4	4.3	4.4	4.3	4.2	4.3	4.3	4.3	4.5	4.4
	INDIAN		OGE	3.6	3.8	3.6	4.0	3.6	4.0	3.8	4.1	3.7	3.6	3.9	3.8	3.8	4.0	3.8

OGE = Obtained Grade Equivalent (converted from Scale Score)  
DIFF = Difference between OGE and Anticipated Grade Equivalent

CONCLUSIONS: 1. The statewide achievement mean for New Mexico fifth graders is a grade equivalent of 4.6, as compared to the expected 5.1. This difference is statistically significant and merits some attention.

2. The statewide academic aptitude mean for the fifth grade is 96, slightly, but significantly, below the national norm of 100. Results of the same test in 1971-72 show exactly the same mean. This mean of 96 is probably not enough below the expected to be regarded as a serious problem, although the causes for which the sub-groups contribute to lowering the mean must be given attention. Means of ethnic sub-groups on the academic aptitude test were not available this year.

3. The Anglo group scored slightly above the national norm on achievement, and the difference is statistically significant.

4. The Spanish, Indian and Negro groups scored significantly lower than the national norm on achievement and the possible causes for these scores should be given special attention.

5. All group means differed significantly from each other in achievement and all but the group "Other" differed significantly from the national norm.

6. The Spanish, Indian and Negro children begin their schooling at a distinct academic aptitude disadvantage to the Anglo and other children as revealed in the first grade test results. Nothing measurable is accomplished in the next four years to narrow or overcome this handicap.

7. Children enrolled in the non-public schools score significantly higher than those in the public schools in achievement.

8. The children at both extremes of ability merit greater attention.

9. No new revelations have been uncovered by the statewide tests of achievement and aptitude since their inauguration four years ago. Initial testing has been replicated three times in the fifth grade in subsequent years with only negligible changes in results. We now know fairly conclusively that New Mexico public school children achieve about one-half a school year below the national norms and that academic ability is very near the national norm. The ethnic subgroups vary considerably in both ability and achievement. Conclusions "4" through "8" above, also continue to be replicated.

#### RECOMMENDATIONS FOR FUTURE ACTION BY LEAs

1. Study district summary data and individual pupil data as they relate to district objectives. Involve teachers, board members and community.
2. Design special programs to remedy areas of deficiency.
3. Share with the State Department of Education and with other districts program designs that have proven successful.
4. Pay particular attention to programs for the 2,600 children in the high ability group, since it is here that we find the biggest difference between anticipated and obtained achievement.

Approximately half of the districts in the state have only two years of comparable data on fifth grade aptitude and achievement. It would appear advisable to continue to measure these attributes with the same

instruments for at least two more years in order to determine, through longitudinal data, the effectiveness of any new programs that may be implemented.

March 1973

ASSESSMENT OF ACADEMIC APTITUDE  
AND ACHIEVEMENT, SCHOOL YEAR 1972-73

GRADE 8

ASSESSMENT OF ACADEMIC APTITUDE  
AND ACHIEVEMENT, SCHOOL YEAR 1972-73

The eighth grade testing was carried out in conjunction with the testing of the fifth grade, and the same procedure was followed for both grades. All grade eight children were tested with the Comprehensive Tests of Basic Skills (CTBS) and the Short Form Test of Academic Aptitude (SFTAA). A total of 23,550 completed tests were scored for this grade level.

ACHIEVEMENT TEST: The rationale used in the development of the CTBS required that the tests measure systematically those skills prerequisite to studying and learning in subject-matter courses. The tests were developed for national use by students who have been taught by different approaches, and the tests are intended to measure those skills common to all curriculums and those needed for success in using language and number skills in any school. Each student was administered tests in four basic skills areas including Reading, Language, Arithmetic, and Study Skills, requiring approximately four hours to complete.

APTITUDE TEST: The California Test of Mental Maturity (CTMM), which was used in 1969 and 1970 sampling, and the SFTAA are similar types of tests and were developed to assess the level of intellectual development attained by the student and to predict his potential rate of progress and level of success in school. The SFTAA was standardized by administration of the test to a national sample of 197,000 students and stratified by geographic region, enrollment size of district, and by public and non-public school. The entire test is usually administered in one normal school period of approximately 45 minutes.

PROCEDURE: Each district was asked to assign a test coordinator for the district through whom test-related communications could be channeled

from the Department of Education. Testing of all eighth grade students was completed during October 1972. Tests were administered according to precise instructions provided in the manual and in pre-test workshops which were held prior to the testing date. The completed tests were then sent by the local district to the Department of Education for preliminary checking. From there the answer sheets were sent to the test scoring service.

STATISTICAL TREATMENT: The answer sheet of each student was coded to indicate the name, date of birth, sex, ethnic background, school, district, size of district and name of teacher. Score printouts were obtained for the school, the district and the State Department of Education showing test results in percentiles and standard scores for the SFTAA and grade equivalents for the CTBS by school, by district and for the state as a whole. State means for ethnic groups and for district size were computed for the Department of Education.

RESULTS: Results are shown in tabular form in Tables I through VI. Table I is a summary of most of the data pertinent to statewide study, including achievement and academic aptitude means by ethnic group and district size. This table also shows data for the non-public schools as well as state and national norms.

Eighth grade score means assume the pattern characteristic of the first and fifth grades, with the state mean being 7.2, almost a full grade below the expected score of 8.1. Among the ethnic classifications, the Anglo group scored slightly above the expected 8.1 grade equivalent with 8.2.

It should be stressed that within each of the ethnic groups, there are students who score well above the national mean. Overall, however, performance is not only below the national mean but below the anticipated score for all ability groups in nearly all sub-tests (See Table II).

Of the eighth grade children who took this test, 2629 scored in the high ability category. At the lower end of the scale, 5170 scored in the low ability group.

Where in the fifth grade testing, Spanish-surnamed children score one grade below the Anglo group, in the eighth grade scoring they are 1.8 grade points below that group. The Anglo group maintains an expected score, but the Spanish group, rather than catching up, falls nearly another grade behind. Indian children, who are 1.5 grades behind the Anglo children in the fifth grade, are 2.8 grades behind them in the eighth grade. Eighth grade Negro children are exactly two grades below the national mean with a grade equivalent of 6.1. Non-public school children scored 7.7 which is almost one-half a grade below the national average for this testing.

Table III shows a three-year comparison of total achievement scores for the eighth grade, with 1970-71 being a small sample. The years 1971-72 and 1972-73 are the results of the complete testings in October of each year.

Table IV is a three-year comparison of academic aptitude mean scores. The 1971-72 means are in most instances a few points below those of the previous two years, and this is attributed primarily to the change from the CTMM to the SFTAA.

Table V indicates that all academic aptitude means shown in Table III differ significantly from each other except that the group "Other" does not differ significantly from the national norm group.

Table VI shows the average score of fifth grade students and the score these fifth graders make three years later in the eighth grade. The division is by ethnic subgroups in order to show the disparity in progress during the three years. Only the group "Other" progresses at expected rate

or better. The other groups and the state do not progress in a way that is to be expected during these three years, with some group losing almost a year and the state as a whole losing seven-tenths of a year.

TABLE I

## NEW MEXICO SCHOOLS

GRADE EIGHT, SCHOOL YEAR 1972-73  
ACHIEVEMENT AND ACADEMIC APTITUDE TEST SUMMARY\*

GROUP	NUMBER TESTFD	ACHIEVEMENT MEANS					STUDY SKILLS	TOTAL	LANGUAGE	ACADEMIC APTITUDE MEANS	
		READING	LANG	ARITH	TOTAL	NON-LANGUAGE				TOTAL	
ANGLO	10,636	8.7	8.3	8.1	8.8	8.2	8.2				
SPANISH	9,061	6.4	6.6	6.6	6.7	6.4	6.4				
INDIAN	1,465	5.3	5.9	5.7	6.0	5.5	5.5				
NEGRO	414	6.1	6.3	6.2	6.5	6.1	6.1				
OTHER	769	7.9	7.5	7.7	8.1	7.6	7.6				
SIZE UNDER 500	775	7.4	7.4	7.4	7.7	7.3	7.3				
SIZE 501-1000	926	6.7	6.6	6.6	6.9	6.5	6.5				
SIZE 1001-5000	6,340	7.0	7.1	6.9	7.3	6.7	6.7				
SIZE OVER 5000	14,304	7.8	7.5	7.4	7.9	7.4	7.4				
PUBLIC	22,345	7.3	7.2	7.3	7.3	7.2	7.2	95	99	97	
NON-PUBLIC	1,205	8.2	8.2	7.7	8.4	7.8	7.8	101	103	102	
STATE:	23,550	7.3	7.2	7.3	7.4	7.2	7.2	96	99	97	
NATIONAL	---	8.1	8.1	8.1	8.1	8.1	8.1	100	100	100	

\*Grade eight children in public and non-public schools were tested with the Comprehensive Tests of Basic Skills and the California Short Form Test of Academic Aptitude in October 1972.

DEPARTMENT OF EDUCATION  
SANTA FE, NEW MEXICO 87501  
JANUARY 1973

TABLE II

STATEWIDE TESTING PROGRAM  
STATEMEANS OCTOBER 1972

		Comprehensive Tests of Basic Skills and Short Form Test of Academic Aptitude															
		READING				LANGUAGE				ARITHMETIC				BATTERY			
		VOC	COMP	TOTAL	MECH	EXP	SPL	TOTAL	COMP	CON	APPLI	TOTAL	TOTAL	REF	STUDY	TOTAL	
		DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	DIFF	
L	NL																
TOTAL	95.7	98.8	96.9	96.9	7.4	7.3	7.3	7.3	7.1	7.3	7.2	7.2	7.2	7.2	7.2	7.4	
N =			23,549		-0.1	-0.1	-0.2	-0.3	-0.5	-0.3	-0.3	-0.6	-0.4	-0.4	0	-0.1	
Public	95.4	98.6	96.6	96.6	7.3	7.3	7.3	7.3	7.1	7.3	7.2	7.2	7.3	7.2	7.4	7.3	
N =			22,345		-0.1	-0.1	-0.1	-0.3	-0.3	-0.2	-0.7	-0.4	-0.4	-0.2	0	-0.1	
Non-Public	101.2	103.0	102.3	102.3	8.1	8.1	8.1	8.1	7.8	8.5	8.1	7.6	8.1	7.7	8.0	8.3	
N =			1,205		-0.1	-0.3	-0.2	-0.5	-0.5	+0.4	-0.1	-0.8	-0.3	-1.0	-0.5	-0.3	
Aptitude National Percentile																	
83 and above					11.2	12.6	11.9	10.7	12.0	10.8	11.0	9.7	10.4	10.5	10.1	10.7	12.5
N = 2629					-0.2	+0.7	+0.2	-0.7	-0.5	.0	-0.4	-0.6	.1	-0.5	-0.4	+0.1	+0.4
40 to 60					7.7	7.7	7.7	7.7	7.6	7.7	7.6	7.6	7.9	7.3	7.6	7.5	7.8
N = 5,629					.0	-0.1	-0.1	-0.5	-0.2	-0.1	-0.3	-0.5	-0.2	-0.8	-0.5	-0.3	-0.2
17 and below					4.8	4.4	4.6	4.8	4.2	5.2	4.8	5.3	5.0	4.6	5.1	4.8	4.9
N = 5,170					-0.3	-0.4	-0.4	-0.7	-0.6	-0.6	-0.5	-0.5	-0.3	-0.8	-0.4	-0.5	-0.2
Ethnic Group	Anglo				8.6	8.8	8.7	8.3	8.7	8.2	8.3	8.1	8.4	8.1	8.1	8.2	8.8
	Spanish				6.4	6.4	6.4	6.8	6.3	7.1	6.6	6.7	6.7	6.3	6.6	6.4	6.8
	Indian				5.3	5.3	5.3	6.2	5.3	6.6	5.9	5.9	5.7	5.3	5.7	5.5	6.0

OGE - Obtained Grade Equivalent - converted from Scale Score

DIFF - Difference between OGE and Anticipated Grade Equivalent

NEW MEXICO SCHOOLS

TABLE III

GRADE 8  
TOTAL ACHIEVEMENT MEANS BY GROUPS FOR 3 YEARS

GROUP	Grade Eq. Score 1970-71	Grade Eq. Score 1971-72	Grade Eq. Score 1972-73
Anglo	8.3	8.2	8.2
Spanish	6.6	6.2	6.4
Indian	5.3	5.4	5.5
Negro	6.6	5.8	6.1
Other	7.8	7.7	7.6
Under 500	6.3	6.8	7.3
501-1000	6.5	6.4	6.5
1001-5000	7.9	6.6	6.7
Over 5000	7.4	7.4	7.4
Non Public	7.5	7.6	7.7
State	7.6	7.2	7.2
National	8.1	8.1	8.1

NEW MEXICO SCHOOLS

TABLE IV

GRADE 8

ACADEMIC APTITUDE SCORES BY GROUPS FOR 4 YEARS

GROUP	SCORE 1969-70*	SCORE 1970-71	SCORE 1971-72	SCORE 1972-73**
Anglo	111	109	103	NA
Spanish	92	95	91	NA
Indian	85	91	85	NA
Negro	86	93	88	NA
Other	108	106	100	NA
Non-Public	NA	103	100	102
State	106	102	97	97
National	100	100	100	100

\*Testing in 1969-70 was of a random sample of eighth grade students.

\*\*Scores for ethnic subgroups not provided.

NEW MEXICO SCHOOLS

TABLE V

SIGNIFICANCE OF DIFFERENCES BETWEEN  
GROUP MEANS ON GRADE EIGHT  
ACADEMIC APTITUDE TEST  
SCHOOL YEAR 1971-72\*

MEAN	GROUP	ANGLO	SPANISH	INDIAN	NEGRO	OTHER	NEW MEXICO
103	ANGLO						
91	SPANISH	S					
85	INDIAN	S	S				
88	NEGRO	S	S	S			
100	OTHER	S	S	S	S		
97	N. M.	S	S	S	S	S	
100	NATIONAL	S	S	S	S	NS	S

\*"S" indicates a significant difference exists between the means of the groups compared; "NS" indicates no significant difference.

TABLE VI

AVERAGE GRADE EQUIVALENT SCORES OF EIGHTH GRADE  
STUDENTS AND THEIR SCORES THREE YEARS  
EARLIER AS FIFTH GRADE STUDENTS  
BY ETHNIC GROUPS

GROUP	FIFTH GRADE MEAN EQUIVALENT SCORE, 1969-70	EIGHTH GRADE MEAN EQUIVALENT SCORE, 1972-73	GRADE EQUIVALENT INCREASE IN 3 YEARS
ANGLO	5.5	8.2	2.7
SPANISH	4.3	6.4	2.1
INDIAN	3.7	5.5	1.8
NEGRO	3.9	6.1	2.2
OTHER	4.3	7.6	3.3
STATE	4.9	7.2	2.3
NATIONAL	5.1	8.1	3.0

CONCLUSIONS: 1. The statewide total achievement mean for New Mexico eighth graders, based on a test population of 23,550, is a grade equivalent of 7.2, as compared to a national norm of 8.1. This is nine months below what is expected of an eighth grade group.

2. The statewide academic aptitude mean for the eighth grade is 97, slightly below the national norm of 100. This is probably not enough below the norm to be of serious concern. Of great concern, however, are the groups within the total population which bring the aptitude mean down, as shown by the figures for the 1971-72 testing in Table IV.

3. The Anglo group scored slightly above the national norms on both achievement and aptitude.

4. The Spanish, Indian and Negro groups scored significantly lower than the national norm on achievement (and aptitude in 1971-72). Bringing their achievement and aptitude up nearer the national norm should be regarded as a critical educational need in the state.

5. The tests administered in the eighth grade show essentially the same results as those administered at the fifth grade; namely, that there are three different populations of students in attendance, divided along the ethnic lines of Anglo, Spanish and Indian, with Negro students scoring below the Spanish and "Others" scoring below the Anglo group. The academic ability disadvantages which the minority groups began with in the first grade are still with them eight years later, and the difference in achievement levels widens.

6. Non-public school children scored about one-half year below the national norm in achievement in the eighth grade, although at the fifth grade they were scoring at the norm. The non-public aptitude norm was 102, slightly above the norm.

7. Approximately 2,629 children in the eighth grade testing scored in the high ability category; about 5,170 children made scores indicating low ability.

RECOMMENDATIONS: The statewide tests of ability and achievement have been very revealing and are achieving the objective of determining the status of educational progress of eighth grade children and the various subgroups of children in this grade. The tests have located and established conclusively several areas in critical need of attention. Each local education agency should study the test results with the intention of developing programs that will remedy the deficiencies revealed. Statewide, it would appear that both the high ability and low ability groups at this level are in need of special attention.

March 1973

A C T REPORT

FEBRUARY 1973

A C T REPORT

FEBRUARY 1973

In the school year 1971-72, 9,107 of the college-bound students in New Mexico high schools took the American College Test (ACT). This represented approximately 45% of the 18,388 twelfth grade students reported in the first forty day ADM for that year. Of this number, 92% were seniors, 5% were juniors, and 3% were classified as "other."

The major portion of the ACT consists of four sections, one each in English, mathematics, social studies, and natural sciences. A composite score is derived from scores obtained on these four tests which are designed to measure the student's ability to perform the kinds of intellectual tasks typically required of college students. Most of the items are concerned with applying what has been learned and are not primarily concerned with specific and detailed subject matter.

In addition to the test battery, a Student Profile section has been added to aid colleges in educational planning and programming. It can also be of use to high schools in curriculum planning and counseling. It is designed to elicit information concerning the goals, background, personal needs (housing, part-time employment, financial aid), and non-classroom achievements of the students. This is an ungraded exercise designed only to provide essential information to educational planners.

Findings discussed below are derived from The High School Profile Report, 1972, prepared by the Research Services of the American

College Testing Program, Iowa City, Iowa. In any presentation on test results, it is well to keep in mind that factors other than test scores bear on student performance, and that these data are general guides and not firm indicators of ability or lack of ability to perform college work.

The picture has not changed greatly from 1970-71. The total composite has dropped .1, from 18.5 in 1970-71 to 18.4 in 1971-72. (See Table 1 and Graph A.) Looking at the scores summarized in this composite, it is noted that a decrease of .3 in girls' scores in mathematics and English is a contributing factor to this decline.

Comparing the scores for 1967-68 with those for 1971-72, it would appear that scores are decreasing in every area but the natural sciences. The social studies test shows the greatest decrement -- 17.7 in 1971-72, down from 19.3 in 1967-68. It may be that these particular tests are not relevant to the curriculum in New Mexico, but this calls for further investigation.

It has been hypothesized that in some districts larger numbers of less academically oriented students have been encouraged to take the test in recent years, thereby depressing the over-all scores. A question might be raised as to whether any student who wishes to do so should be permitted to take the ACT. If the answer is affirmative, further questions regarding adequacy of academic preparation and counseling of these students for college entry need to be considered.

**T A B L E 1**  
**A C T M E A N S - N E W M E X I C O**

YEAR	N	ENGLISH		TOTAL	MATHEMATICS		TOTAL	SOCIAL STUDIES		TOTAL	NATURAL SCIENCES		TOTAL	COMPOSITE		TOTAL
		BOY	GIRL		BOY	GIRL		BOY	GIRL		BOY	GIRL		BOY	GIRL	
1967-68	8,239	17.5	19.5	18.5	19.6	17.0	18.4	19.8	18.8	19.3	21.5	19.9	20.3	19.7	18.7	19.2
	B - 4,348															
	G - 3,891															
1968-69	7,843	17.9	19.5	18.7	20.2	18.0	19.1	20.2	18.9	19.6	21.7	19.2	20.5	20.0	19.1	19.5
	B - 3,947															
	G - 3,896															
1969-70	8,771	17.2	18.8	18.0	20.4	18.0	19.2	19.7	18.1	18.9	21.5	19.7	20.6	19.8	18.8	19.3
	B - 4,403															
	G - 4,368															
1970-71	9,091	16.4	18.2	17.4	19.3	17.0	18.1	18.2	17.4	17.8	21.2	19.3	20.3	18.9	18.1	18.5
	B - 4,478															
	G - 4,613															
1971-72	9,107	16.3	17.9	17.1	19.3	16.7	18.0	18.2	17.2	17.7	21.3	19.1	20.2	18.9	17.9	18.4
	B - 4,501															
	G - 4,606															
	2,674,485			18.2			19.0			19.4			20.1			19.3
								<u>NATIONAL MEANS*</u>								

\*Based on 2,674,485 college-bound students who took the ACT tests during the period 1967-70.

Using ACT on the Campus 1971/72, p. 15

English

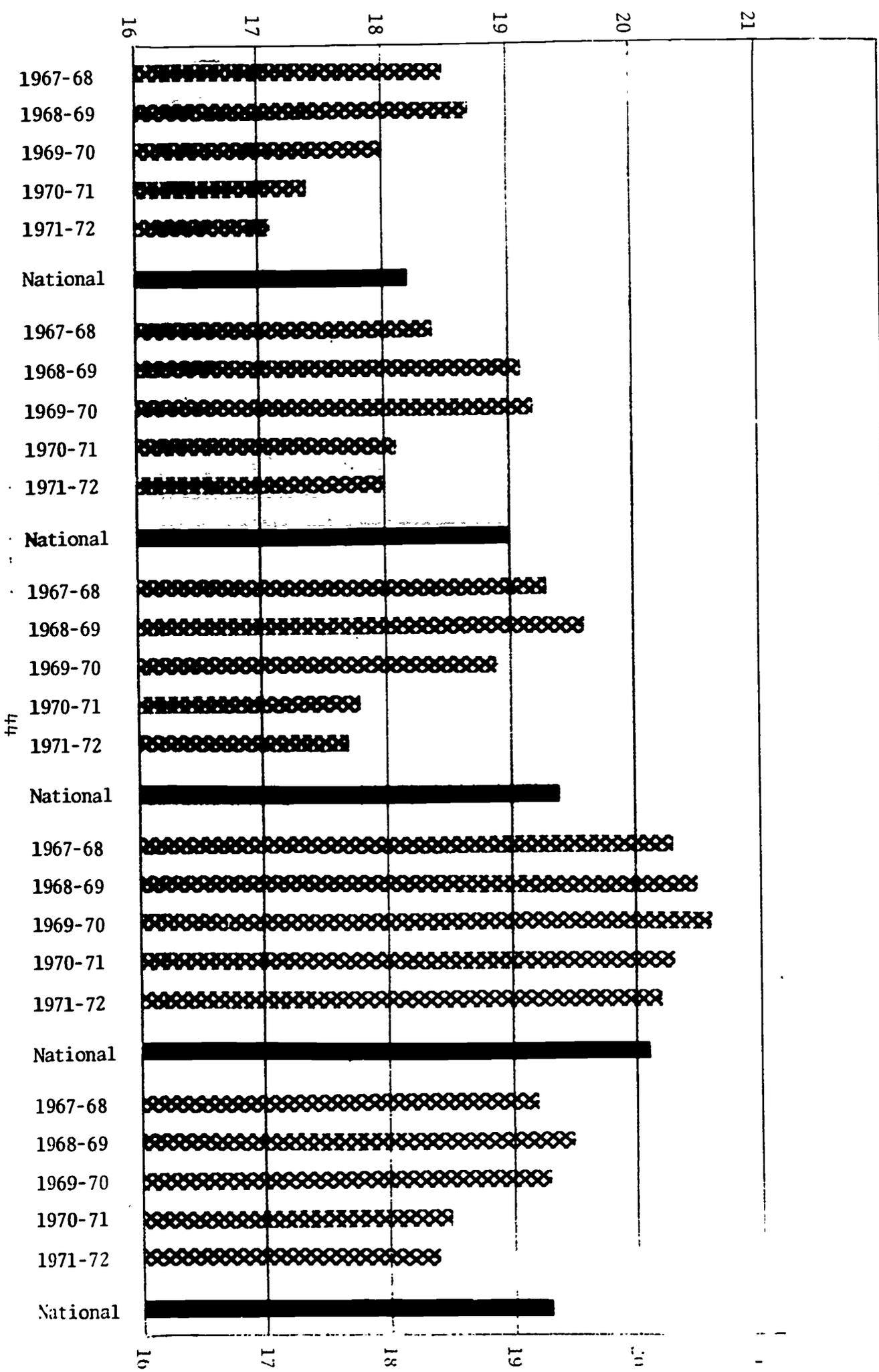
Mathematics

Social Studies

Natural Sciences

Composite

GRAPH A  
A C T MEAN SCORES - NEW MEXICO HIGH SCHOOLS  
1967-1972



Examination of these questions is further indicated by the fact that New Mexico students report slightly higher grades on high school subjects and lower scores on the ACT than the national average. (See ACT Report - 1972.)

Educational plans of New Mexico high school graduates are summarized in Table 2.

TABLE 2

EDUCATIONAL PLANS - DEGREES SOUGHT

		<u>1969-70</u>	<u>1970-71</u>	<u>1971-72</u>
Vocational-Technical (less than 2 years)	New Mexico	4%	4%	4%
	National		3%	
Two-year college degree	New Mexico	12%	13%	14%
	National		14%	
Bachelor's degree or equivalent	New Mexico	41%	41%	39%
	National		44%	
One or two years graduate study	New Mexico	23%	21%	20%
	National		21%	
Doctorate (Ph.D, M.D., etc.)	New Mexico	11%	9%	11%
	National		8%	
All others H.S. diploma, J.D., L.L.B., B.D., etc.	New Mexico	9%	10%	11%
	National		10%	

The shift in National priorities from academic to vocational skills is reflected in this table in a slight decrease in percent of those planning on obtaining a bachelor's degree and going on to do graduate work,

with a corresponding increase in those choosing a two-year college degree. Increasing availability of community colleges may contribute to this trend also. Percent of those planning on two years or less of vocational-technical training remains constant at 4%. (It should be remembered that this test is usually taken only by those planning on going on to college.)

The lower per capita income reported for New Mexico (\$3,131 compared with a national average of \$3,921\*) undoubtedly has a bearing on plans for higher education. Six percent of New Mexico students, as compared to three percent nationally, reported family income of less than \$3,000, and 59% of all New Mexico students taking the test in 1971-72 indicated they would need financial assistance all through college.

One section of the profile asks students to indicate their racial or ethnic background. Table 3 gives the responses to this question together with similar information from the Statewide Testing Program for 1971-72.

	GRADE 1	GRADE 5	GRADE 8	ACT
Anglo	45	49	50	61
Spanish	43	41	40	22
Indian	9	7	6	7
Negro	2	2	2	2
Other, or prefer not to respond	1	1	1	8
N =	21,940	24,559	22,769	9,107

\*How New Mexico Stacks Up On Education 1972, Research Unit, State Department of Education, Santa Fe, New Mexico, p. 10.

From these data it appears that Anglo students are over-represented in percent of college-bound students and Spanish-American students are under-represented, a situation that is not entirely unsuspected. These figures, however, do give an indication of the dimensions of the disparity.

It would seem that conclusions reached earlier are still valid, i.e., that New Mexico students are well prepared in the area of the natural sciences; that we need to take a good look at what is being taught, and learned, in English, mathematics, and social sciences; that grading practices need to be evaluated; and that provisions for financial aid to qualified students need to be expanded. A further conclusion might be drawn that still greater effort must be made to ensure that able students from all ethnic groups are encouraged to participate in higher education.

February 1973