

## DOCUMENT RESUME

ED 105 007

UD 014 996

TITLE [Puerto Rico] State Annual Evaluation Report, Title I  
ESEA, Fiscal Year, 1972.

INSTITUTION Puerto Rico State Dept. of Education, Hato Rey.

PUB DATE 72

NOTE 132p.; A few pages may reproduce poorly due to  
quality of original document

EDRS PRICE MF-\$0.76 HC-\$6.97 PLUS POSTAGE

DESCRIPTORS \*Annual Reports; Comparative Analysis; Educational  
Needs; English (Second Language); Language Ability;  
\*Program Administration; \*Program Evaluation; Reading  
Achievement; School Districts; School Systems;  
Spanish Speaking; Student Characteristics

IDENTIFIERS Elementary Secondary Education Act Title I; ESEA  
Title I; \*Puerto Rico

## ABSTRACT

This Commonwealth of Puerto Rico evaluation report on programs, projects, services, and activities funded in whole or in part under Elementary Secondary Education Act Title I, is organized into seven parts. Part 1, "Basic Information" includes subsections focusing on the Puerto Rico School System, Title I target areas, and program emphasis. Part 2 specifies the "Total Allocation for Fiscal Year 1972." Part 3 discusses the methods and procedures used in executing the "Program Evaluation." The contents of Part 4, "Test Results," are organized into two subsections detailing "Statistical Analysis" and "Summary of Tests Results" respectively. Part 5 summarizes the "Plans of Twelfth Grade Graduates." "Project Profiles" are given in Part 6. Part 7 is a "Summary of Major Findings." Also included in the report are four charts--48 tables and 26 graphs. Among the latter are the following: Spanish and English Reading Tests, D.M.A.--Sixth Grade, Relative Ranking of School Districts Based on Percentage of Students Scoring at or above the Fiftieth Percentile, April 1972; Comparison of Spanish Reading Test Scores in the years 1971 and 1972--Fourth Grade Relative Ranking of School Districts Based on Percentage of Students Scoring at or above the Fiftieth Percentile, April 1972; and 24 others. (Author/JM)

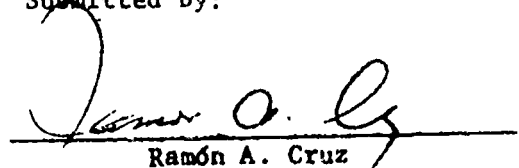
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Department of Education  
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State Annual Evaluation Report  
Title I, E S E A  
Fiscal Year, 1972

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Evaluation Division  
Area of Planning and  
Educational Development

UD CI 4996

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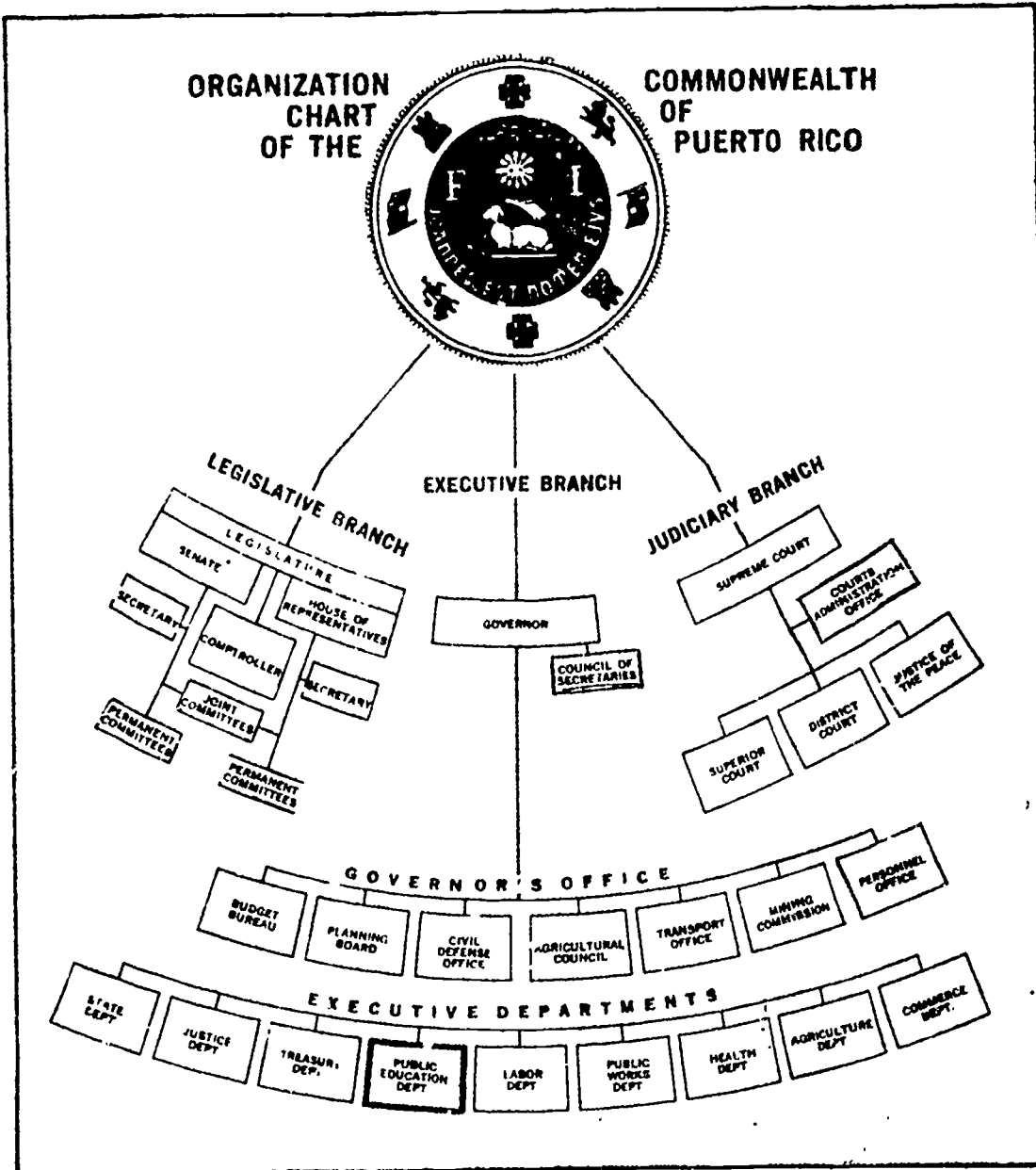
BASIC INFORMATION

## Basic Information

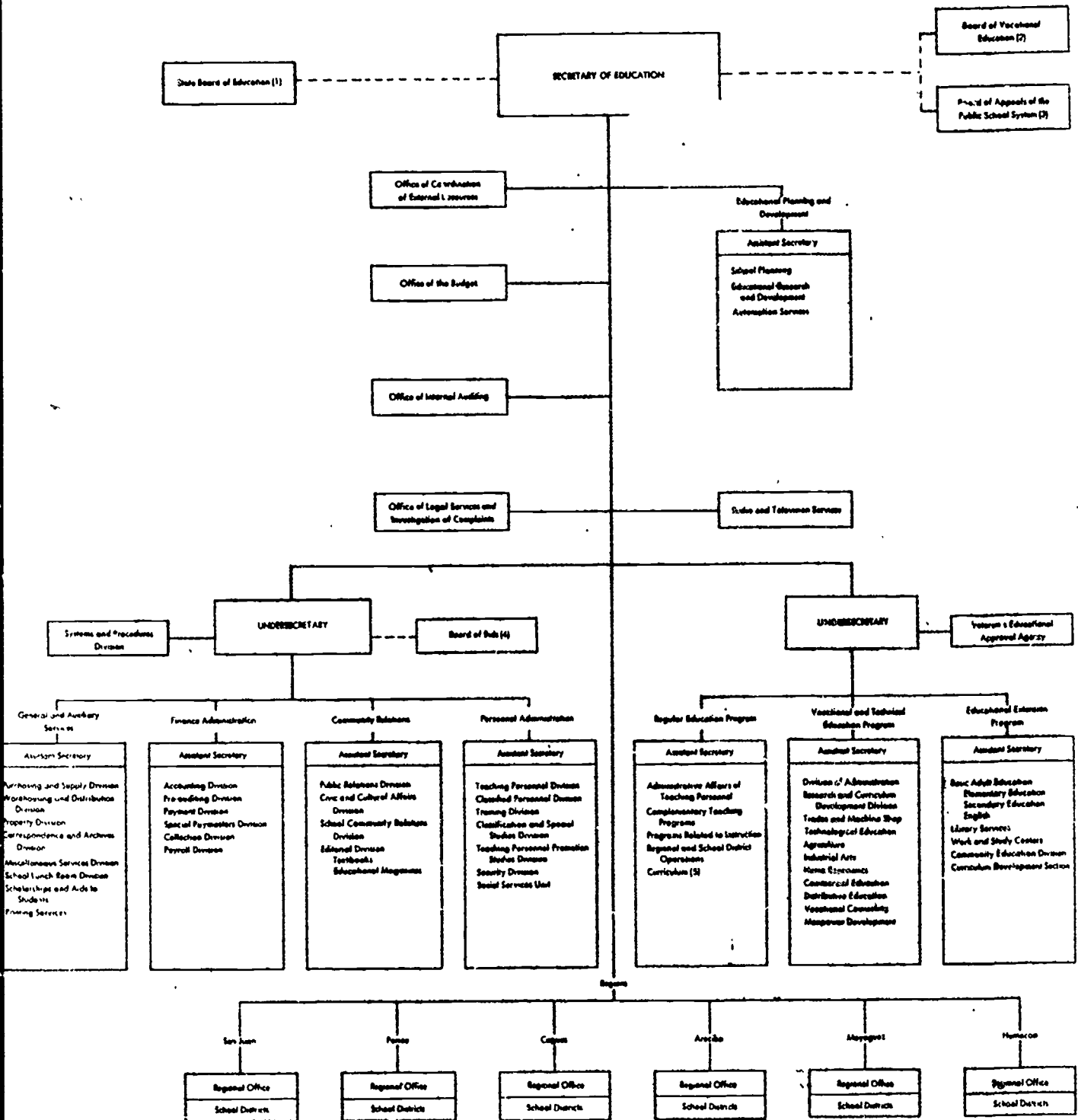
### A. The Puerto Rico School System

The Department of Education in Puerto Rico functions as a single large district or Local Educational Agency. This means that the specific goals and objectives for elementary and secondary education in Puerto Rico as well as the plans to carry out these objectives are designed at the State level.

The head of the Department of Education is the Secretary of Education, who as all directors of the executive agencies, is appointed by the Governor of Puerto Rico. (See Chart 1 - Organization Chart of the Commonwealth of Puerto Rico). The Constitution of the Commonwealth of Puerto Rico as well as the School Laws empower the Secretary of Education to organize, direct, finance and supervise the public school system. This system is organized into 83 school districts which are in turn grouped into six educational regions: San Juan, Ponce, Mayaguez, Arecibo, Caguas and Humacao. (See Chart 2 - Organization Chart of the Department of Education). It is at the central level of the Department of Education, that instructional and administrative policy is established, thus determining the school curriculum, selecting, purchasing and distributing textbooks; equipment and materials, deciding construction of school buildings, appointing and paying teachers, administrators and supervisors, supervising teachers and conducting evaluation. The local aspects of these responsibilities are delegated by the Secretary of Education to the regional and district offices.



COMMONWEALTH OF PUERTO RICO  
DEPARTMENT OF EDUCATION  
ORGANIZATION CHART



Created by Act No. 179 of June 29, 1969. Cooperates with Secretary of Education in the formulation of a philosophy of education and in the study and solution of basic educational problems.  
 Created by Act No. 26 of April 21, 1971.  
 Created by Act No. 115 of June 30, 1968.  
 Created by administrative action on March 10, 1970.  
 Branch: English, Science, Mathematics, Social Studies, Physical Education, Fine Arts, Kindergarten, S. A. Education

Office of the Undersecretary for Administration-Systems and Procedures Division  
September, 1971



For fiscal year 1972 the total public and private accredited school enrollment of Puerto Rico totalled 807,438 pupils attending regular day schools. Of this total 712,452 students or 88.0% were attending public schools while 94,986 or 12.0% were attending private accredited schools.

The number of pupils attending urban public schools was 423,614 or 61.0% of the total, while the enrollment in rural public schools was 269,875 or 39.0%. At the same date there were 23,446 teachers working in 19,218 classrooms.

In spite of increasing funds for education and our permanent interest in the betterment of the educational level of the Island's population, the Puerto Rico State Department of Education continues facing the dilemma of providing more and better educational experiences to an ever increasing number of students. Pupil/teacher as well as pupil/classroom ratio are too high. Consequently, a large number of students get less than six hours of daily instruction. The retention rate has been increasing but it is still low. A high percentage of teachers currently in service have not fulfilled the academic requirements for a regular certificate.

The generally poor economic condition of Puerto Rico is reflected in the funds available for education. Although the Commonwealth Government devotes consistently about one third of its annual budget to education, the average annual expenditure per pupil has only reached \$491 in 1971-72. This is one of the lowest among all States. Title I funding thus constitutes a major thrust among efforts to upgrade the educational system in Puerto Rico.

B. Title I Target Area

Since 1969 Title I funds have been almost exclusively assigned to projects within thirty-five school districts, identified as the most under privileged on the basis of per-capita income and lowest academic achievement. (See Map on next page illustrating geographical location of selected districts).

As of August 1971 the situation within the 35 Title I districts was as follows:

a. Total school enrollment

Total Public and Private School enrollment	- 234,231 (29% of total Island)
Total Public	- 229,035 (98% of total enrollment)
Total Private	- 5,196 (2% of total enrollment)

b. Urban Rural proportion

Total enrollment in Urban Public Schools	- 99,011 (43% of total enrollment)
Total enrollment in Rural Public Schools	- 130,024 (57% of total enrollment)

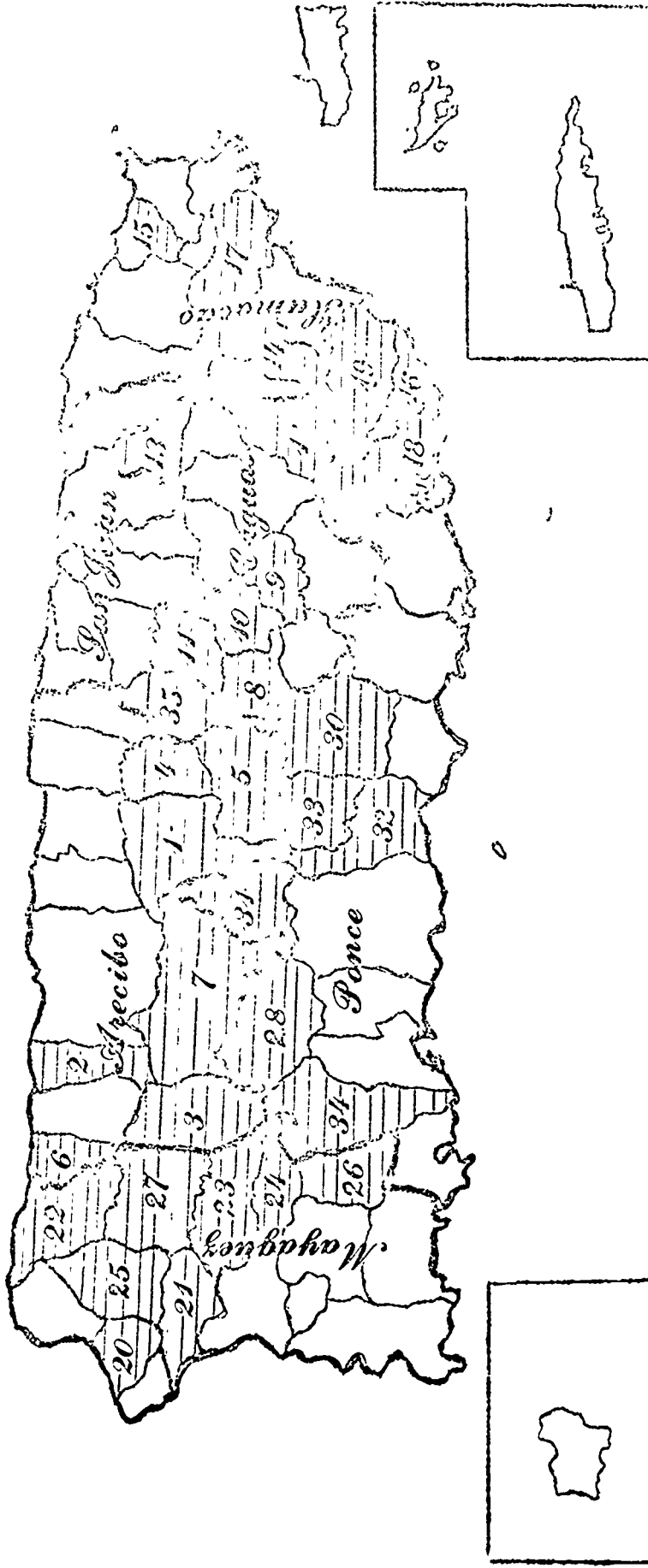
This urban-rural proportion differs from that in the 48 remaining districts where the balance leans toward the urban zone as follows:

Urban 337,130 (70.0%) and Rural 146,287 (30.0%)

c. Enrollment by type of organization (Grades 1 - 12)

Single enrollment (six hours)	- 153,182 (70%)
Interlocking and Double enrollment organization	- 65,960 (30%)

TITLE I SCHOOL DISTRICTS



<u>Arecibo Region</u>	<u>Caguas Region</u>	<u>Humacao Region</u>	<u>Mayaguez Region</u>	<u>Ponce Region</u>	<u>San Juan Region</u>
1. Ciales	8. Barranquitas	14. Las Piedras	20. Aguada	28. Adjuntas	35. Corozal
2. Hatillo	9. Cidra	15. Luquillo	21. Añasco	29. Arroyo	
3. Lares	10. Comerío	16. Maunabo	22. Isabela	30. Coarao	
4. Morovis	11. Naranjito	17. Naguabo	23. Las Marías	31. Jayuya	
5. Orcoovis	12. San Lorenzo	18. Patillas	24. Maricao	32. Juana Díaz	
6. Quebradillas	13. Trujillo Alto	19. Yabucoa	25. Moca	33. Villalba	
7. Utuado			26. Sabana Grande	34. Yauco	
			27. San Sebastián		



d. Teachers and classrooms

Total number of classrooms	- 6,533 .
Total number of teachers	- 7,609
Number of teachers with provisional certificate	- 2,051 (27%)

This percentage reflects that the need for adequately trained teachers is still more acute within this sector than in the rest of the Island, where only 15% of the teachers hold provisional certificates.

C. Program Emphasis

The four main project areas designated as priorities and under which all Title I projects were classified since 1969, continued through fiscal year 1972 with slight modifications. Budgetary allocations by each of these areas as well as by specific activities within areas, are included in the next section of this report.

TOTAL ALLOCATION FOR FISCAL YEAR 1972

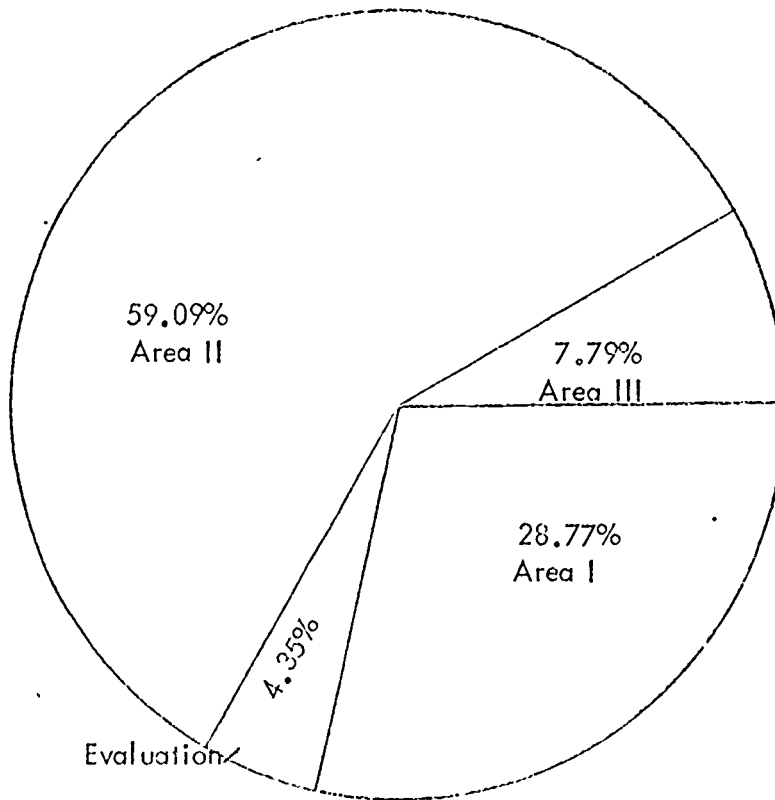
BUDGETARY ALLOCATIONS

PROJECT AREAS

PROJECT AREAS AND ACTIVITIES

CHART III

BUDGETARY ALLOCATIONS BY AREAS  
YEAR 1972

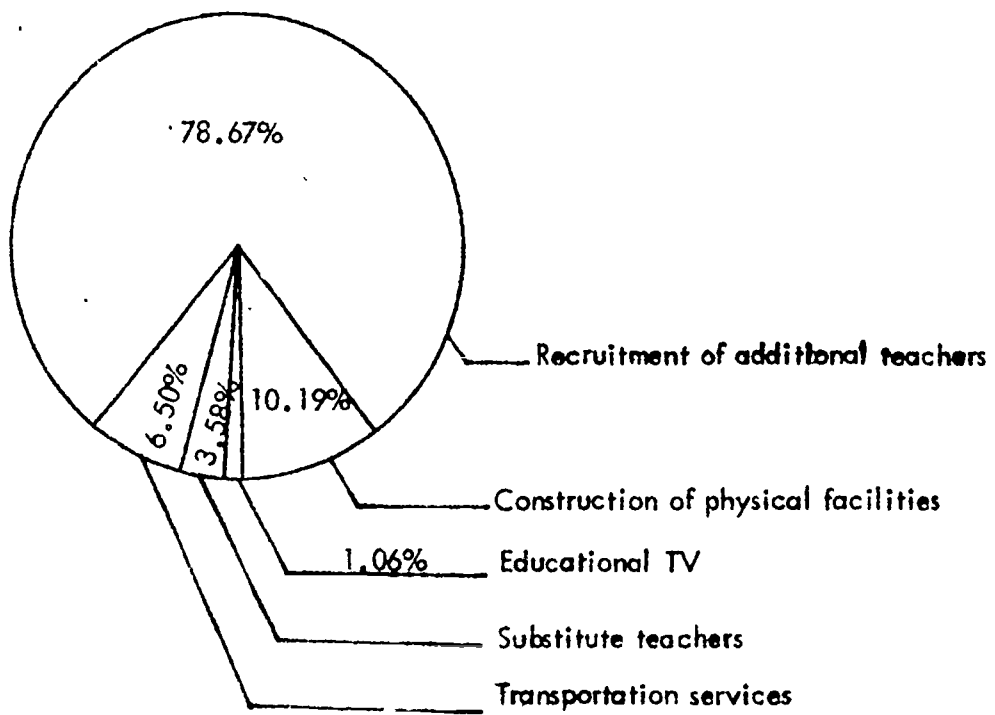


	Amount Assigned	%
Area I: Lengthening the school day	\$9,236,236	28.77%
Area II: Curriculum enrichment and improvement of pupils' academic achievement	18,969,379	59.09%
Area III: Supportive services	2,501,373	7.79%
Evaluation of Title I Projects	1,396,448	4.35%
Total	32,103,436*	100%

\*Total includes a carry over of \$3,092,759

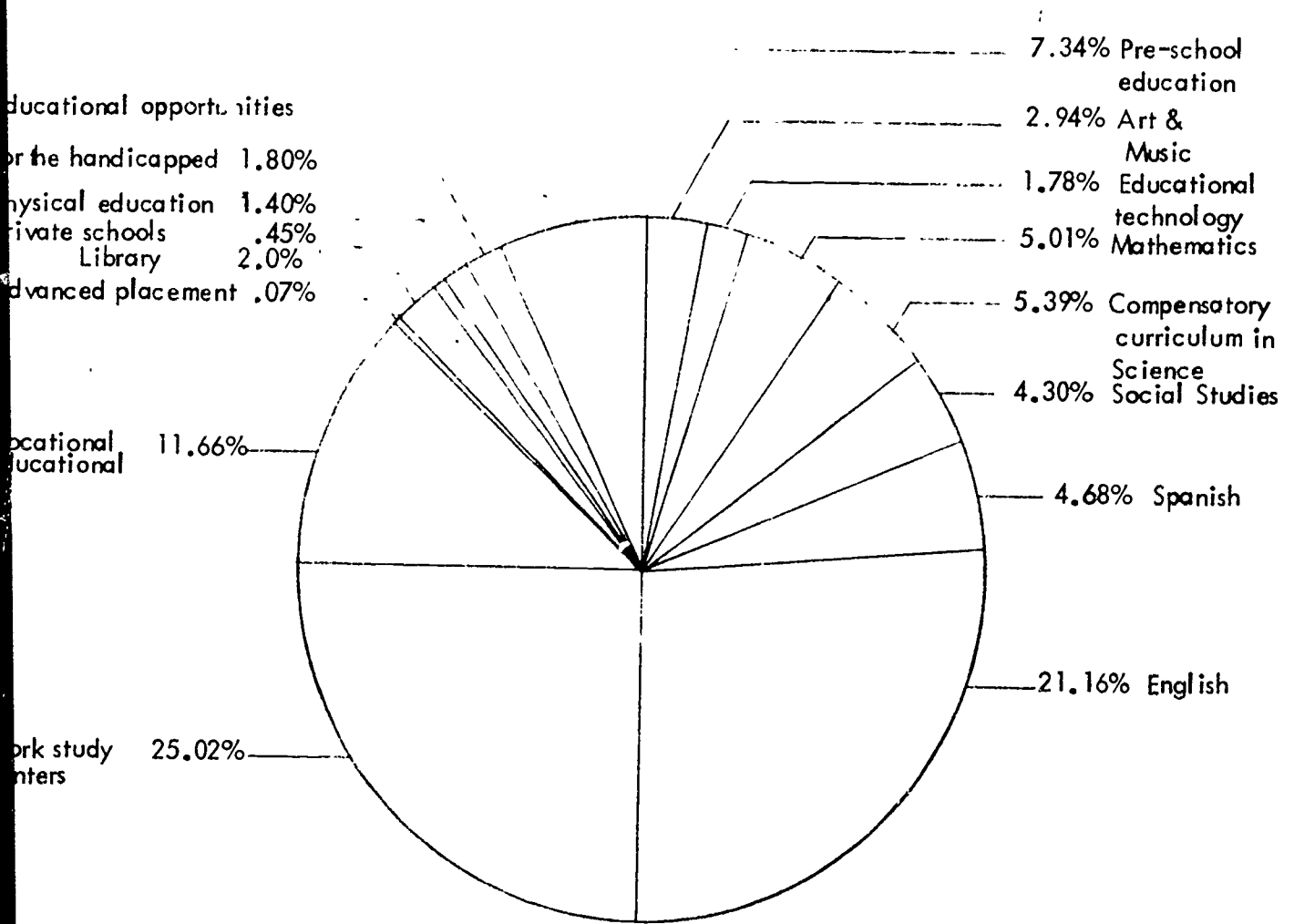
CHART IV

BUDGETARY ALLOCATIONS BY AREA AND ACTIVITIES  
YEAR 1972



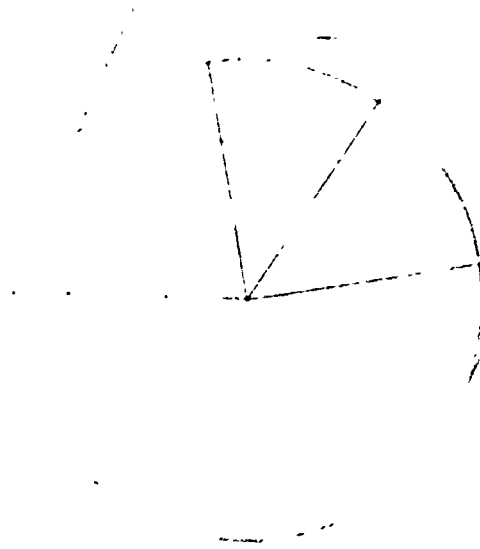
Area I: Lengthening the School Day

BUDGETARY ALLOCATIONS BY AREAS & ACTIVITIES  
YEAR 1972



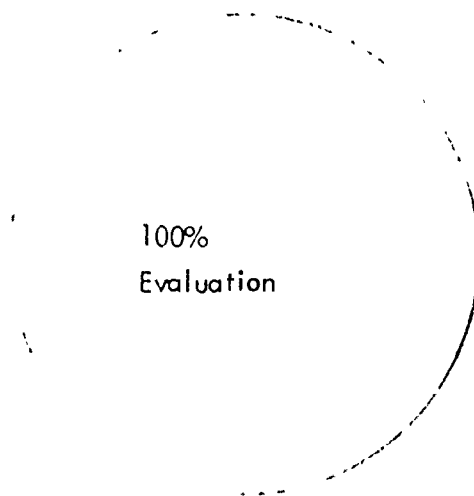
Area II: Curricular Enrichment and Improvement  
of Students' Achievement

BUDGETARY ALLOCATIONS BY AREA & ACTIVITIES  
YEAR 1972



- 21.80% Recreational & cultural enrichment
- 12.28% School & community
- 13.25% Social work program
- 52.67% Health services

Area III: Supportive Services



Evaluation of Title I Projects

PROGRAM EVALUATION

6



## Program Evaluation

In keeping with the functions assigned to the Division of Evaluation of the Puerto Rico State Department of Education concerning the Title I evaluation requirement, data gathering activities continued to be designed and developed at two levels. First, to assess specific project objectives and second, to assess overall Title I program impact on pupils' achievement.

At the project level, both formal and informal evaluation techniques are applied depending on factors such as nature of objectives, availability of measuring instruments, etc. At this level, the Division of Evaluation functions in a supportive role. Project directors in coordination with supervisors from the Division of Evaluation compile statistical and descriptive data deemed to be essential for evaluation purposes and reporting. Technical assistance is provided through seminars, workshops, interviews and the like. The definition of objectives in behavioral terms, the preparation of evaluation designs, test construction, and analysis and interpretation of test results, are among the most frequent topics covered. The overall program assessment continued as in previous years to encompass mainly the development of standardized testing in Spanish and English reading in various grade levels and the analysis of the data related to school dropouts, failures and plans of twelfth grade graduates. Simultaneously, other standardized tests are being developed which are expected to be ready for administration in 1973. These are achievement tests in Mathematics, Spanish Language and Listening-Speaking Comprehension in English. Although the present report intends to focus both evaluation levels, the latter one, because of its objective nature, is specially stressed.

Due to technical difficulties at the Electronic Center of the Department of Education, as well as limitations on the amount of testing materials available, a statewide testing program as extensive as that developed in 1971 was not feasible this year. For evaluation purpose a sample of 18 school districts (See Table 1) was selected on the basis of the following criteria:

1. Socio-economic level
2. Proportion of urban and rural school enrollment
3. Geographical distribution
4. Title I participation (6 districts from the Title I Sector - 12 districts-non-Title I Sector)

Standardized tests administered by grade and subject matter are listed below:

Test	Grades	Districts*
General Ability	4, 7, 10	18 district sample
Spanish Reading	4, 6, 7, 10	18 district sample
	5, 8, 11	12 district sample
English Reading	6, 7, 10	18 district sample

The results that were obtained in each of the grades tested by district and by regions as well as comparisons between the 6 Title I districts vs. the 12 Non-Title I districts are included in this report.

---

\*18 district sample (See Table 1) sample selected for overall Title I evaluation program

\*12 district sample - sub sample selected for evaluation of Project 34 (Spanish)

Enrollment Figures by District Zones, and Grades  
 Sample for 1971-72 Testing for the Measurement of Title I Progress



District	Grade 7		Grade 8		Grade 9		Grade 10		Grade 11		Grade 12		Total
	M	F	M	F	M	F	M	F	M	F	M	F	
1. O'Connell	137	177	177	204	211	258	258	258	258	258	258	258	258
2. O'Connell	177	177	177	177	177	177	177	177	177	177	177	177	177
3. Madriaga	177	177	177	177	177	177	177	177	177	177	177	177	177
4. Las Mariñas	177	177	177	177	177	177	177	177	177	177	177	177	177
5. Santa Fe	177	177	177	177	177	177	177	177	177	177	177	177	177
6. Corral	177	177	177	177	177	177	177	177	177	177	177	177	177
Not Title I													
7. Canby	120	120	120	120	120	120	120	120	120	120	120	120	120
8. N. Starr	240	240	240	240	240	240	240	240	240	240	240	240	240
9. Cayey	240	240	240	240	240	240	240	240	240	240	240	240	240
10. Garabó	117	300	443	114	302	419	114	319	300	414	114	319	623
11. Fajardo	305	152	517	364	150	494	377	33	470	526	380	494	623
12. Juncos	207	379	56	---	---	---	227	342	564	405	159	127	623
13. Aguadilla	353	795	1,148	---	---	---	538	707	1,045	773	---	---	623
14. Cabo Rojo	151	359	520	179	376	555	138	232	470	247	237	484	229
15. Guánica	212	126	338	---	---	---	195	133	323	288	---	268	225
16. Peñuelas	195	335	531	180	379	559	166	273	433	247	250	457	186
17. Dorado	130	361	491	196	285	481	175	249	425	214	175	398	164
18. Toa Baja	519	818	1,337	---	---	---	503	706	1,209	682	436	1,118	---
17 TOTAL	4099	7653	11752	2382	4310	6692	4223	6492	10715	5981	3860	9841	2842
													1845
													6936
													3212
													4315

TEST RESULTS

## Test Results

The statistical analysis done on the test data for this report includes the following:

1. Comparison of mean scores by zone within each school district for 1972.
2. Comparison of mean scores by zone within each educational region for 1972.
3. Comparison of total mean scores between the Title I districts (6) and Non-Title districts (12) for 1972.
4. Comparison of total mean scores between the Title I districts and Non-Title I districts by zone for 1972.
5. Comparison of mean scores by grade for the years 1971 and 1972 by district, region, Title I and Non-Title I Sector.
6. Interquartile ranges of test scores on the basis of percentage of students achieving at or above the 50th percentile.
7. Ranking of school districts based on the percentage of students achieving at or above the 50th percentile in the Spanish Reading test.
8. Comparison of ranking attained by school districts in Spanish Reading in relation to English Reading.
9. Comparison of the same group of students in two consecutive grades ( e. g. fourth grade (1971) vs. fifth grade 1972).

### Summary of Test Results

A. The analysis of mean scores obtained by students in the various grades tested by districts, zones, Title I and Non-Title I sectors, in both Spanish and English reading reveal that:

- a. students from the urban zone continue to achieve higher mean scores in both English and Spanish reading than pupils from the rural zone. The differences observed at all levels are statistically significant. (See Tables 2, 3 and Graphs 1 - 13).
- b. in general, no significant differences are observed as to achievement levels attained in both Spanish and English reading within each grade level for the years 1971 and 1972, that is, mean scores obtained by grades and by school districts in 1972 are more or less the same as those obtained the preceding year in the same grades. (See Tables 4 - 10).
- c. higher mean scores correspond to the upper grade when results are compared for the same group of students in two consecutive years. As expected, fifth grade achievement as measured by the Spanish and English reading tests, is better than fourth grade achievement for the same group of students, eighth better than seventh and eleventh better than tenth. (See tables 11 - 13).
- d. in general, students from the Title I sector continued to achieve slightly lower mean scores than the students from the Non-Title I sector. However, consistent with the situation encountered in 1971, the difference in mean scores between urban and rural zone is smaller

within the Title I sector than within the Non-Title I sector (See Tables 14 - 23).

- e. in spite of lower mean scoring within the Title I sector, the amount of gain observed in Spanish reading from one year to the other, is approximately the same or better than the amount of gain observed within the Non-Title I sector. (See tables 11-13). The total mean differences for the Title I sector were 4.97 from the fourth to the fifth grade; 5.65 from the seventh to the eighth and 3.35 from tenth to eleventh. For the Non Title I sector the total mean differences were 5.10 from the fourth to the fifth, 5.06 from the seventh to the eighth and 3.68 from tenth to eleventh grade.

B. The analysis of interquartile ranges of Spanish Reading scores, based on percentage of scores within quarters by district, reveal that:

- a. as expected, approximately 25% of all cases from the 18 district sample (total) fell within each quarter. (See Tables 24 - 25).
- b. approximately the same percentage of students from the Title I and Non-Title I districts fell within the limits of the middle quarters (second and third), however in the extremes of the distribution (upper and lowest quarters), greater differences are observed. A larger percentage of scores within the Title I sector fell within the lowest range. (See Table 25).

The rank order of school districts established on the basis of percentage of scores at or above the 50th percentile in Spanish reading in grades 4, 7 and 10 is indicated on Table 26. With a few exceptions within grades, Title I districts' ranking correspond to positions 13 to 18, the lowest within

the total distribution. Rank order attained by individual districts is rather consistent not only from one year to the other (See Graphs 14 - 16) but also across subjects (English and Spanish). (See Graphs 11 - 13).



Table 2 -a  
 Test Results by District and Grade  
 Spanish Reading  
 Urban Zone  
 April 1972

District		4th	5th	7th	8th	10th	11th
Comerio	N	155	200	255	168	230	178
	$\bar{X}$	228.0	233.2	240.0	246.2	250.3	254.0
	SD	6.3	7.8	9.7	9.9	10.4	11.3
Corozal	N	188	216	229	216	412	313
	$\bar{X}$	224.5	228.0	236.3	242.8	250.4	254.0
	SD	5.6	8.0	12.3	11.0	10.6	12.0
Jayuya	N	143	149	151	126	228	224
	$\bar{X}$	227.0	230.9	240.6	247.3	249.9	255.7
	SD	8.0	8.6	11.5	11.7	9.9	11.5
Las Marías	N	64	63	74	58	73	49
	$\bar{X}$	228.0	233.0	243.6	247.8	250.8	259.5
	SD	7.0	8.0	10.1	10.2	10.8	13.3
Maunabo	N	120	118	149	114	147	120
	$\bar{X}$	231.0	235.0	240.0	246.2	254.0	257.4
	SD	7.0	8.0	10.0	11.7	11.6	12.6
Orocovis	N	119	148	161	150	347	292
	$\bar{X}$	225.1	228.0	239.1	245.1	249.4	251.8
	SD	4.9	7.0	9.1	11.3	10.9	10.7
Cabo Rojo	N	157	165	227	202	267	220
	$\bar{X}$	233.7	238.0	245.9	249.9	256.0	260.3
	SD	8.6	10.0	11.9	12.1	11.6	11.2
Aguadilla	N	310	-	293	-	526	-
	$\bar{X}$	228.0	-	244.0	-	254.0	-
	SD	7.4	-	11.1	-	11.3	-
Cimuy	N	119	-	146	-	243	-
	$\bar{X}$	230.0	-	243.9	-	253.7	-
	SD	6.6	-	10.1	-	11.1	-
Cayey	N	462	-	510	-	561	-
	$\bar{X}$	232.0	-	240.0	-	252.9	-
	SD	9.0	-	9.2	-	9.8	-
Dorado	N	107	174	163	151	186	158
	$\bar{X}$	227.4	232.5	240.9	243.8	253.1	255.9
	SD	7.6	9.3	10.6	10.9	10.6	11.3
Fajardo	N	405	332	424	345	394	325
	$\bar{X}$	230.5	235.0	242.1	248.5	254.0	256.6
	SD	7.9	10.0	10.9	11.2	11.6	13.1
Guánica	N	312	-	248	-	162	-
	$\bar{X}$	230.0	-	242.0	-	252.6	-
	SD	6.6	-	10.9	-	11.7	-
Gurabo	N	97	106	287	224	200	168
	$\bar{X}$	231.0	233.2	240.0	242.1	251.4	255.9
	SD	9.0	10.6	9.9	11.3	10.9	11.4
Juncos	N	193	-	339	-	265	-
	$\bar{X}$	227.0	-	235.9	-	254.0	-
	SD	7.5	-	9.0	-	10.7	-
Manatí	N	237	278	426	435	418	350
	$\bar{X}$	226.2	233.4	240.1	245.0	252.7	254.0
	SD	6.4	10.0	9.7	12.5	11.2	11.0
Peñuelas	N	176	155	203	161	197	167
	$\bar{X}$	228.0	231.0	240.0	246.9	254.0	256.8
	SD	6.9	8.0	9.0	11.1	9.9	11.9
Toa Baja	N	507	-	597	-	584	-
	$\bar{X}$	228.9	-	240.9	-	250.3	-
	SD	7.1	-	10.6	-	11.7	-

Table 2 -b  
 Test Results by District and Grade  
 Spanish Reading  
 Rural Zone  
 April 1972

DISTRICT		4th	5th	7th	8th
COMERIO	N	363	317	154	157
	$\bar{X}$	228.0	231.7	237.7	242.1
	SD	6.9	7.9	7.8	9.3
COROZAL	N	485	529	282	245
	$\bar{X}$	226.0	231.9	238.9	241.1
	SD	6.0	8.1	9.6	11.5
JAYUYA	N	344	288	171	136
	$\bar{X}$	226.0	230.5	240.0	242.4
	SD	6.4	8.1	9.3	10.3
LAS MARIAS	N	207	143	67	59
	$\bar{X}$	226.7	231.0	238.5	240.8
	SD	6.3	7.2	8.8	10.2
MAUNABO	N	404	192	91	73
	$\bar{X}$	228.0	231.0	238.2	241.8
	SD	5.6	6.8	6.8	8.0
OROCOVIS	N	528	472	408	333
	$\bar{X}$	226.7	232.0	240.0	244.5
	SD	5.3	8.0	8.7	9.7
CABO ROJO	N	327	342	188	145
	$\bar{X}$	229.9	233.0	244.0	249.0
	SD	6.1	8.2	9.2	11.0
AGUADILLA	N	678	---	376	---
	$\bar{X}$	229.9	---	242.4	---
	SD	6.1	---	10.6	---
CAMUY	N	412	---	251	---
	$\bar{X}$	228.0	---	240.0	---
	SD	7.0	---	9.0	---
CAYEY	N	563	---	325	---
	$\bar{X}$	229.0	---	241.5	---
	SD	6.0	---	9.6	---
DORADO	N	308	250	156	138
	$\bar{X}$	225.0	229.2	241.1	242.8
	SD	6.8	6.9	10.7	10.2
FAJARDO	N	111	116	---	---
	$\bar{X}$	226.0	231.9	---	---
	SD	6.0	6.6	---	---
GUANICA	N	125	---	---	---
	$\bar{X}$	227.1	---	---	---
	SD	6.3	---	---	---
GURABO	N	252	266	33	32
	$\bar{X}$	227.8	231.0	236.0	240.3
	SD	7.2	8.7	11.0	12.10
JUNCOS	N	311	---	131	---
	$\bar{X}$	226.9	---	238.5	---
	SD	5.6	---	9.2	---
MANATI	N	378	351	56	83
	$\bar{X}$	225.9	229.2	235.9	240.0
	SD	5.1	6.9	7.8	9.3
PEÑUELAS	N	282	317	218	152
	$\bar{X}$	227.9	232.3	243.3	245.0
	SD	6.3	8.7	9.7	10.0
TOA BAJA	N	689	---	389	---
	$\bar{X}$	225.0	---	238.4	---
	SD	6.8	---	9.6	---

Table 2 -c  
 Test Results by District and Grade  
 Spanish Reading  
 Total (Urban and Rural)  
 April 1972

District		4th	5th	7th	8th	10th	11th
Comerio	N	518	517	409	325	230	178
	$\bar{X}$	228.0	232.0	239.7	244.8	250.3	254.0
	SD	6.7	8.0	9.2	8.9	10.4	11.3
Corozal	N	673	745	511	461	412	313
	$\bar{X}$	225.8	231.0	237.7	241.9	250.4	254.0
	SD	6.1	8.1	10.9	11.1	10.6	12.0
Jayuya	N	487	437	322	262	228	224
	$\bar{X}$	226.4	230.6	240.2	245.0	249.9	255.7
	SD	6.6	8.3	10.5	11.0	9.9	11.5
Las Marfas	N	271	206	141	117	73	49
	$\bar{X}$	227.0	231.4	240.7	244.8	250.8	259.5
	SD	6.1	8.2	10.4	9.8	10.8	13.3
Maunabo	N	324	310	240	187	147	120
	$\bar{X}$	229.2	232.0	239.8	245.0	254.0	257.4
	SD	6.4	8.0	9.0	9.7	11.6	12.6
Orocovis	N	647	620	569	483	347	292
	$\bar{X}$	226.2	231.0	239.9	245.0	249.4	251.8
	SD	5.8	7.9	8.7	9.9	10.9	10.7
Cabo Rojo	N	484	507	415	347	267	220
	$\bar{X}$	231.0	235.0	245.0	249.4	256.0	260.3
	SD	7.6	8.8	10.8	11.9	11.6	11.2
Aguadilla	N	988	-	669	-	526	-
	$\bar{X}$	229.3	-	243.1	-	254.0	-
	SD	6.7	-	10.5	-	11.3	-
Camuy	N	531	-	397	-	243	-
	$\bar{X}$	228.0	-	240.9	-	253.7	-
	SD	7.1	-	10.0	-	11.1	-
Cayey	N	1025	-	835	-	561	-
	$\bar{X}$	230.6	-	240.2	-	252.9	-
	SD	7.4	-	9.9	-	9.8	-
Dorado	N	415	424	319	289	186	158
	$\bar{X}$	225.6	230.6	241.0	243.3	253.1	255.9
	SD	6.9	8.3	10.6	10.2	10.6	11.2
Fajardo	N	516	448	424	345	394	325
	$\bar{X}$	229.8	233.9	242.1	248.5	254.0	256.6
	SD	7.7	9.2	10.9	11.2	11.6	13.1
Guánica	N	317	-	248	-	162	-
	$\bar{X}$	228.8	-	242.0	-	252.6	-
	SD	6.6	-	10.9	-	11.7	-
Guabo	N	349	372	320	256	200	168
	$\bar{X}$	228.4	231.4	239.7	241.8	251.4	255.9
	SD	7.6	9.4	9.8	11.2	10.9	11.4
Juncos	N	504	-	470	-	265	-
	$\bar{X}$	227.0	-	236.6	-	254.0	-
	SD	6.0	-	9.1	-	10.7	-
Manatí	N	615	629	482	518	418	350
	$\bar{X}$	226.0	231.0	240.0	244.8	252.7	254.0
	SD	6.0	9.0	9.1	11.4	11.2	11.0
Peñuelas	N	458	472	421	313	197	167
	$\bar{X}$	228.0	232.0	241.7	245.6	254.0	256.8
	SD	6.4	8.6	10.6	11.4	9.9	11.9
Toa Baja	N	1196	-	986	-	584	-
	$\bar{X}$	227.0	-	240.0	-	250.3	-
	SD	6.8	-	10.5	-	11.7	-

Table 3

Test Results by District, Grade and Zone  
English Reading - April 1972

District		6th. Grade			7th. Grade			10th. Grade
		U	R	T	U	R	T	U
*Comerfo	N	186	297	483	255	149	404	237
	$\bar{X}$	20.7	19.0	19.7	339.5	340.0	339.7	349.8
	SD	7.35	7.37	7.41	9.70	7.80	9.00	9.20
*Corozal	N	185	428	613	211	288	499	423
	$\bar{X}$	18.9	18.6	18.7	339.2	338.1	338.6	349.7
	SD	8.94	7.47	7.93	9.50	8.60	9.00	9.83
*Jayuya	N	147	268	415	152	172	324	220
	$\bar{X}$	18.3	16.4	17.0	341.2	339.1	340.1	349.6
	SD	9.09	6.21	7.41	11.30	9.40	10.40	9.90
*Las Marías	N	76	146	222	74	66	140	74
	$\bar{X}$	24.5	17.2	19.7	340.6	339.1	339.9	347.8
	SD	9.52	6.95	8.62	9.70	9.20	9.50	8.30
*Maunabo	N	137	156	293	140	87	227	149
	$\bar{X}$	21.7	18.8	20.1	338.2	338.8	338.4	356.7
	SD	8.30	6.42	7.49	8.30	8.30	8.30	15.30
*Orocovis	N	128	450	578	155	405	560	349
	$\bar{X}$	19.2	20.3	20.0	339.5	341.2	340.8	349.3
	SD	8.07	7.57	7.69	10.50	8.90	9.40	9.20
Cabo Rojo	N	131	299	430	231	199	430	274
	$\bar{X}$	27.5	24.2	25.2	349.3	345.2	347.4	360.6
	SD	9.59	9.93	9.94	11.80	10.80	11.50	14.10
Aguadilla	N	318	625	943	290	370	660	518
	$\bar{X}$	26.4	23.1	24.3	344.5	345.8	345.2	355.9
	SD	10.09	10.00	10.15	10.20	11.50	10.90	13.40
Camuy	N	126	304	430	147	250	397	246
	$\bar{X}$	27.3	20.4	22.4	344.1	340.2	341.7	353.1
	SD	10.37	8.76	9.76	9.40	9.30	9.90	10.70
Cayey	N	448	451	899	509	328	837	563
	$\bar{X}$	25.4	21.9	23.6	342.2	341.5	342.0	353.7
	SD	8.48	8.56	8.70	9.70	10.20	9.90	12.10
Dorado	N	102	172	274	163	155	318	185
	$\bar{X}$	21.7	24.8	23.6	340.6	340.1	340.4	352.2
	SD	10.34	10.00	10.22	11.80	10.90	11.30	11.10
Fajardo	N	360	97	457	424	0	424	395
	$\bar{X}$	28.7	25.4	28.0	344.2	0	344.2	358.2
	SD	11.11	9.98	10.95	12.60	0	12.60	14.60
Guánica	N	172	122	294	244	0	244	162
	$\bar{X}$	29.2	22.6	26.5	346.8	0	346.8	356.9
	SD	10.62	9.26	10.58	11.10	0	11.10	22.50
Gurabo	N	103	351	454	287	25	312	204
	$\bar{X}$	21.4	17.9	18.7	340.1	342.1	340.2	351.8
	SD	10.97	9.79	10.16	10.60	12.50	10.90	12.40
Juncos	N	213	294	507	339	130	469	265
	$\bar{X}$	20.2	18.3	19.1	339.8	339.5	339.7	353.5
	SD	9.11	7.98	8.52	10.00	10.30	10.00	10.20
Manatí	N	315	386	701	494	56	550	450
	$\bar{X}$	20.4	18.0	19.1	341.1	338.6	340.8	351.6
	SD	9.40	7.85	8.66	11.00	11.10	11.10	12.20
Peñuelas	N	145	264	409	211	213	424	202
	$\bar{X}$	18.1	24.1	22.0	343.9	346.5	345.2	353.9
	SD	8.34	9.93	9.82	9.30	10.00	9.70	10.30
Toa Baja	N	446	609	1055	604	389	993	580
	$\bar{X}$	25.8	18.0	21.3	344.1	339.5	342.3	355.7
	SD	11.60	8.31	10.56	14.00	10.60	12.60	23.40
Totales	N	3738	5719	9457	4930	3282	8212	5496
	$\bar{X}$	23.8	20.2	21.6	342.5	341.4	342.0	354.0
	SD	10.36	8.93	9.67	10.80	10.50	11.00	12.50

\*Title I Districts

Table 4 - a  
Spanish Reading Test  
Fourth Grade  
Urban Zone

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
*Orocovis	140	226.0	119	225.1		0.9		
*Comerio	172	227.0	155	228.0	1.0			
*Maunabo	125	228.0	120	231.0	3.0		x	
*Las Marías	54	224.0	64	228.0	4.0		x	
*Jayuya	138	227.7	143	227.0		0.7		
*C. rozal	169	223.0	188	224.5	1.5			
Camuy	128	230.0	119	230.0				
Manatí	279	227.1	237	226.2		0.9		
Cayey	490	232.0	462	232.0				
Gurabo	97	228.0	97	231.0	3.0		x	
Fajardo	292	231.0	405	230.5		0.5		
Juncos	194	228.0	193	227.0		1.0		
Aguadilla	324	229.1	310	228.0		1.1		
Cabo Rojo	174	232.1	157	233.7	1.6			
Guánica	151	233.0	192	230.0		3.0	x	
Peñuelas	108	226.5	458	228.0	1.5			
Dorado	113	219.4	107	227.4	8.0		x	
Toa Baja	422	220.3	507	228.9	8.6		x	
					Total Mean Difference 1.34 Not significant			

\*Title I districts

Table 4 -b

SPANISH READING TEST  
FOURTH GRADE  
RURAL ZONE

COMPARISON OF TEST SCORES FOR THE YEARS 1971 AND 1972

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Orocovis	514	227.0	528	226.7		0.3		
Comerfo	309	227.0	363	228.0	1.0			
Maunabo	205	226.0	204	228.0	2.0			x
Las Marfas	162	225.1	207	226.7	1.6			
Jayuya	344	226.0	344	226.0	0			
Corozal	544	226.9	485	226.0	.9			
Camuy	366	227.0	412	228.0	1.0			
Manatí	383	225.0	378	225.9	0.9			
Cayey	602	228.9	563	229.0	0.1			
Gurabo	300	225.0	252	227.8	2.8		x	
Fajardo	118	228.0	111	226.0		2.0		x
Juncos	320	226.0	311	226.9	0.1			
Aguadilla	662	228.0	678	229.9	1.9			x
Cabo Rojo	349	228.2	327	229.9	1.7			x
Guánica	98	227.0	125	227.1	0.1			
Peñuelas	350	226.6	282	227.9	1.3			
Dorado	315	224.7	308	225.0	0.3			
Toa Baja	708	225.0	689	225.9	0.9			

Total Mean Difference 0.93  
38 Not Significant

Table 4 - c  
Spanish Reading Test  
Fourth Grade  
Urban and Rural

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
*Orocovis	654	227.0	647	226.2		0.8		
*Comerio	481	227.0	518	228.0	1.0			
*Maunabo	330	227.0	324	229.2	2.2			x
Las Marías	216	225.0	271	227.0	2.0			x
*Jauya	482	226.2	487	226.4	0.2			
*Corozal	713	226.0	673	225.8		0.2		
Camuy	494	227.5	531	228.0	0.5			
Manatí	662	226.0	615	226.0				
Cayey	1092	230.3	1025	230.0		0.3		
Gerabo	397	225.9	349	228.4	2.5			x
Lajardo	400	230.0	516	229.8		0.2		
Juncos	514	227.0	504	227.0				
Aguadilla	986	228.0	988	229.3	1.3			
Cabo Rojo	522	230.0	484	231.0	1.0			
Guánica	249	230.0	317	228.0		2.0		x
Peñuelas	458	226.6	458	228.0	1.4			
Dorado	428	225.0	415	225.6	0.6			
Toa Baja	1130	226.1	1196	227.0	0.9			
*Title I districts					Total Mean Difference 0.56 Not significant			

Table 5 - a  
Spanish Reading Test  
Sixth Grade  
Urban Zone

DISTRICT	1970-71		1971-72		Difference		Level of Significance		
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%	
Crocovia	137	23.3	130	22.0		1.3			
Comerio	198	25.4	210	24.8		0.6			
Canabo	130	24.2	135	26.1	1.9			x	
Las Marías	57	25.9	71	25.5		0.4			
Araya	87	25.3	148	24.2	1.1				
Crozal	154	22.2	184	23.2	1.0				
Canay	109	28.0	124	28.0					
Manatí	205	24.6	305	23.4		1.2			
Cayey	455	30.0	460	29.7		0.3			
Gurabo	121	24.8	158	22.4		2.4		x	
Fajardo	309	27.0	359	26.6		0.4			
Juncos	176	25.2	214	24.7		0.5			
Aguadilla	237	28.4	307	27.7		0.7			
Cabo Rojo	166	29.7	133	28.1		1.6			
Guánica	163	27.5	173	27.7	0.2				
Peñuelas	152	24.0	146	24.4	0.4				
Dorado	165	24.1	104	24.0		0.1			
Toa Baja	418	26.0	451	25.4		0.6			
					<b>Total Mean Difference</b>				
*Title I districts					-0.24		Not significant		



Table 5 -b

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SPANISH READING TEST - SIXTH GRADE  
RURAL ZONE

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Orocovis	392	24.6	425	23.8		0.8		
Guayama	294	23.5	304	23.0		0.5		
San Juan	131	23.1	157	22.9		0.2		
San Marías	123	22.3	147	21.6		0.7		
San Juan	204	24.3	264	22.8		1.5		
San Juan	379	24.2	432	23.2		1.0		
San Juan	287	24.9	307	24.9				
Manatí	323	23.6	394	22.1		1.5		
Cayey	353	27.0	457	26.9		0.1		
Gurabo	260	22.7	323	21.4		1.3		
Fajardo	82	22.1	99	25.3	3.2		x	
San Juan	270	24.0	286	23.5		0.5		
Aguadilla	486	26.1	631	26.3	0.2			
Cabo Rojo	289	27.7	291	26.3		1.4		
Guánica	62	26.0	126	25.1		0.9		
Peñuelas	229	25.1	262	24.1		1.0		
Dorado	179	25.5	169	25.0		0.5		
San Juan	528	21.0	618	21.3	0.3			
Title I districts					Total Mean Difference -0.45 Not significant			

Table 5 -c

SPANISH READING TEST - SIXTH GRADE  
Urban and Rural

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Arrocovis	529	24.3	555	23.4		0.9		
Comerio	492	24.3	514	23.7		0.6		
Maunabo	261	23.7	292	24.4	0.7			
Las Marias	180	23.5	8	22.9		0.6		
Maya	291	24.6	12	23.3		1.3		
Corozal	533	23.6	616	23.2		0.4		
Yaguajay	396	25.7	431	25.8	0.1			
Matanzas	528	24.0	699	22.7		1.3		
Caibarien	808	28.7	917	28.3		0.4		
Guarabaco	381	23.3	481	21.7		1.6		
Fajardo	391	26.0	458	26.4		0.4		
San Juan	446	24.5	500	24.0		0.5		
Aguadilla	723	26.8	938	26.8				
San Juan	455	28.4	424	26.9		1.5		
Guánica	225	27.1	299	26.6		0.5		
San Juan	381	24.7	408	24.2		0.5		
San Juan	344	24.8	273	24.7		0.1		
San Juan	946	23.2	1069	23.0		0.2		
Title I districts					Total Mean Difference -0.56 Not significant			

Table - a

ENGLISH READING TEST  
SIXTH GRADE  
URBAN ZONE

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Arcoavis	133	18.1	128	19.2	1.1			
Arroyo	189	18.2	186	20.7	2.5		x	
Carabo	129	18.3	137	21.7	3.4		x	
Las Marías	571	20.7	76	24.5	4.5		x	
Levuya	145	17.5	147	18.3	0.8			
Prozál	160	17.8	185	18.9	1.1			
Sandy	110	23.7	126	27.3	3.6		x	
Manatí	265	20.0	315	20.4	0.4			
Cayey	462	24.1	448	25.4	1.3			
Carabo	124	19.6	103	21.4	1.8			
Fajardo	316	27.8	360	28.7	0.9			
Juncos	179	19.9	213	20.2	0.3			
Aguadilla	235	24.9	318	26.4	1.5			
Cabo Rojo	166	26.9	131	27.5	0.6			
Guánica	167	27.1	172	29.2	2.1			x
Peñuelas	148	19.9	145	18.1		1.8		
Corado	168	21.8	102	21.7		0.1		
Toa Baja	421	25.0	446	25.8	0.8			
*Title I districts					Total Mean Difference 1.5 Not significant			

Table 6-b  
ENGLISH READING TEST  
SIXTH GRADE  
RURAL ZONE

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Arrocovis	405	20.1	450	20.3	0.2			
Comerio	281	18.3	297	19.0	0.7			
Canabo	123	19.1	156	18.8		0.3		
Las Marias	128	17.8	146	17.2		0.6		
El Naya	185	17.8	268	16.4		1.4		
Corozal	375	19.1	428	18.6		0.5		
Sanuy	288	20.6	304	20.4		0.2		
Matf	375	17.7	386	18.0	0.3			
Cayey	349	22.2	451	21.9		0.3		
Guarabo	269	20.8	351	17.9		2.9	x	
Fajardo	83	19.5	97	25.4	5.9		x	
Juncos	266	19.0	294	18.3		0.7		
Aguadilla	506	24.0	625	23.1		0.9		
Cabo Rojo	285	25.0	299	24.2		0.8		
Cuánica	62	19.8	122	22.6	2.8		x	
Peñuelas	227	20.2	264	24.1	3.9		x	
Dorado	181	18.9	172	24.8	5.9		x	
Toa Baja	526	17.1	609	18.0	0.9			
*Title I districts					Total Mean Difference 0.69 Not significant			

Table b-c  
 ENGLISH READING TEST  
 SIXTH GRADE  
 URBAN AND RURAL

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
*rocovis	538	19.6	578	20.0	0.4			
*Comerio	470	18.3	483	19.7	1.4			
Caunabo	252	18.7	293	20.1	1.4			
Las Marfas	185	18.7	222	19.7	1.0			
Cauya	330	17.7	415	17.0		0.7		
Corozal	535	18.7	613	18.7	-	-		
Camuy	398	21.5	430	22.4	0.9			
Manatí	640	18.6	701	19.1	0.5			
Cayey	811	23.3	899	23.6	0.3			
Gurabo	393	20.4	454	18.7		1.7		
Fajardo	399	26.0	457	28.0	2.0			x
Juncos	445	19.4	507	19.1	0.3			
Aguadilla	741	24.3	943	24.3	-	-		
San Juan	451	25.7	430	25.2		0.5		
Guánica	229	25.1	294	26.5	1.4			
Peñuelas	375	20.1	409	22.0	1.9			
Barahona	349	20.3	274	23.6	3.3			x
San Pedro de Macoris	947	20.6	1,055	21.3	0.7			
					Total Mean Difference 0.75 Not significant			

\*Title I districts

Table 7 - a

SPANISH READING TEST  
COMPARISON OF TOTAL MEAN SCORES BY SCHOOL DISTRICTS BETWEEN  
THE YEARS 1971 AND 1972 - SEVENTH GRADE  
URBAN ZONE

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Arrocovis	162	239.0	161	239.1	0.1			
Merfo	191	240.9	255	240.0		0.9		
Manabo	122	240.0	149	240.0				
Las Marias	67	240.0	74	243.6	3.6			x
Sanuya	142	242.4	151	240.6		1.8		
Corozal	231	237.2	229	236.3		0.9		x
Manuy	160	242.6	146	243.9	1.3			
Manatí	493	240.0	426	240.1	0.1			
Cayey	508	240.9	510	240.0		0.9		
Carabo	313	237.6	287	240.0	2.4			x
Fajardo	358	243.8	424	242.1		1.7		
Juncos	298	240.1	339	235.9		4.2		x
Aguadilla	248	244.4	293	244.0		0.4		
Cabo Rojo	216	244.8	227	245.9	1.1			
Guánica	304	241.1	248	242.0	0.9			
Peñuelas	160	241.2	203	240.0		1.2		
Dorado	148	239.3	163	240.9	1.6			
Toa Baja	527	240.4	597	240.8	0.4			
*Title I districts					Total Mean Difference 0.05 Not significant			

Table 7 - b

SPANISH READING TEST  
COMPARISON OF TOTAL MEAN SCORES BY SCHOOL DISTRICTS BETWEEN  
THE YEARS 1971 and 1972 - SEVENTH GRADE  
RURAL ZONE

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Orocovis	392	239.5	408	240.0	0.5			
Ponce	154	238.1	154	237.7		0.4		
Maunabo	92	237.1	91	238.2	1.1			
Las Marías	71	237.2	67	238.5	1.4			
Mayagüez	143	238.5	171	240.0	1.5			
Corozal	185	238.2	282	238.9	0.7			
Camuy	229	240.0	251	240.0				
Sancti Spiritus	79	237.6	56	235.9		1.7		
Cayey	308	243.0	325	241.5		1.5		
Guayama	37	236.0	33	236.0				
Fajardo	No data							
Juncos	130	240.0	131	238.5		1.5		
Aguadilla	358	241.2	376	242.4	1.2			
Cabo Rojo	179	242.6	188	244.0	1.4			
Guánica	No data							
Peñuelas	188	238.4	218	243.3	4.9		x	
San Juan	143	238.8	156	241.1	2.3			x
San Sebastián	313	239.7	389	238.4		0.3		
Title I districts					Total Mean Difference 0.48 Not significant			

Table 7 - c

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SPANISH READING TEST  
SEVENTH GRADE  
URBAN AND RURAL

DISTRICT	1970-71		1971-72		Difference		Level of Significance		
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%	
Brocovis	554	239.4	569	239.9	0.5				
Cemerfo	345	240.0	409	239.7		0.3			
Cunabo	214	238.8	240	239.8	1.0				
Las Marías	138	238.3	141	240.7	2.4			x	
Matya	285	240.0	322	240.2	0.2				
Merzál	416	237.6	511	237.7	0.1				
Mayaj	389	241.1	397	240.9		0.2			
Manatí	572	240.0	482	240.0					
Cayey	816	241.7	835	240.2		1.5			
Gurabo	350	237.4	320	239.7	2.3			x	
Fajardo	358	243.8	424	242.1		1.7			
Juncos	428	240.0	470	236.0		4.0	x	x	
Aguadilla	606	242.5	669	243.1	0.6				
Cabo Rojo	395	243.8	415	245.0	1.2				
Guánica	304	241.1	248	242.0	0.9				
Peñuelas	348	240.0	421	241.7	1.7				
Dorado	291	239.1	319	241.0	1.9				
Yuca Baja	840	240.0	986	240.0					
Title I districts					Total Mean Difference 0.30		Not significant		



Table 8 -a

ENGLISH READING TEST - SEVENTH GRADE  
URBAN ZONE

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
*Orocovis	157	341.0	155	339.5		1.5		
*Comerio	191	342.0	255	339.5		2.5		
*Maunabo	120	339.0	140	338.2		0.8		
*Las Marías	66	339.3	74	340.6	1.3			
*Jayuya	140	344.8	152	341.2		3.6		
*Corozal	191	339.2	211	339.2				
Camuy	161	346.3	147	344.1		2.2		x
*Manatí	495	341.2	494	341.1		0.1		
Cayey	511	342.6	509	342.2		0.4		
Guarabo	281	338.9	287	340.1	1.2			
Fajardo	362	346.1	424	344.2		1.9		x
Juncos	298	339.4	339	339.8	0.4			
Aguadilla	247	345.5	290	344.5		1.0		
*Cabo Rojo	217	347.7	231	349.3	1.6			
Guánica	289	345.0	244	346.8	1.8			
Peñuelas	162	342.9	211	343.9	1.0			
Dorado	151	339.5	163	340.6	1.1			
Toa Baja	527	345.3	604	344.1		1.2		
*Title I districts					Total Mean Difference		-0.025 Not significant	

Table 8b

ENGLISH READING TEST  
SEVENTH GRADE  
RURAL ZONE

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
*Crocovis	385	340.7	405	341.2	0.5			
*Comerio	160	337.8	149	340.0	2.2			x
Maunabo	98	342.4	87	338.8		3.6	x	
*Las Marías	67	336.3	66	339.1*	2.8		x	
*Javuya	145	338.9	172	339.1	0.2			
*Corozal	273	337.9	288	338.1	0.2			
Camuy	231	340.2	250	340.2				
Manatí	78	336.7	56	338.6	1.9			x
Cayeav	309	342.2	328	341.1		1.1		
Gerabo	37	339.3	25	342.1	2.8		x	
Ajardo	-	-	-	-	-	-	-	-
Puncos	131	339.3	130	339.5	0.2			
Aguadilla	337	344.1	370	345.8	1.7			
Cabo Rojo	179	345.3	199	341.2		4.1	x	
Guánica	0	-	-	-	-			
Peñuelas	182	341.3	213	346.5	5.2		x	
Horado	142	337.8	155	340.1	2.3			x
Toa Baja	313	338.3	389	339.5	1.2			
*Title I districts					Total Mean Difference 0.69 Not Significant			

Table 8-c  
ENGLISH READING TEST  
SEVENTH GRADE  
URBAN AND RURAL

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Orocovis	542	340.8	560	340.80	-	-	-	-
Comerio	351	340.1	404	339.70	-	0.4	-	-
Maunabo	218	340.3	227	338.40	-	1.9	-	-
*Las Marías	133	337.8	140	339.90	2.10	-	-	x
*Jayuya	285	341.8	324	340.10	-	1.70	-	-
Corozal	464	338.4	499	338.60	0.2	-	-	-
Camuy	392	342.7	397	341.70	-	1.00	-	-
Manatí	573	340.6	550	340.80	0.2	-	-	-
Cayey	820	342.5	837	342.00	-	0.5	-	-
Guarabo	318	338.9	312	340.20	1.30	-	-	-
Sajardo	362	346.1	424	344.20	-	1.9	-	-
Puncos	429	339.4	469	339.70	0.3	-	-	-
Aguadilla	584	344.7	660	345.20	0.5	-	-	-
*Cabo Rojo	396	346.6	430	347.70	1.10	-	-	-
Guánica	289	345.0	244	346.80	1.80	-	-	-
Peñuelas	344	342.1	424	345.20	3.10	-	x	x
Orado	293	338.7	318	340.40	1.70	-	-	-
Loa Baja	840	342.7	993	342.30	-	0.4	-	-
*Title I districts					Total Mean Difference 0.25 Not Significant			

Table 9  
Spanish Reading Test  
Tenth Grade

DISTRICT	1970-71		1971-72		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Arrecife	347	251.1	347	249.4		1.7		
Camaguey	239	251.8	230	250.3		1.5		
Cardenas	131	253.4	147	254.0	0.6			
San Juan	53	253.4	73	250.8		2.6	x	
Sancti Spiritus	253	252.6	228	249.9		2.7	x	
Sancti Spiritus	357	250.0	412	250.4	0.4			
Sancti Spiritus	184	253.9	243	253.7		0.2		
Manatí	295	249.1	418	252.7	3.6		x	
Cayey	258	254.4	561	252.9		1.5		
Gurabo	186	251.7	200	251.4		0.3		
Fajardo	350	254.5	394	254.0		0.5		
Juncos	237	252.5	265	254.0	1.5			
Aguadilla	256	254.0	526	254.0				
Cabo Rojo	230	255.8	267	256.0	0.2			
Guánica	174	253.1	162	252.6		0.5		
Pefuelas	---	-----	197	254.0				
Dorado	181	253.2	186	253.1		0.1		
Toa Baja	465	251.0	584	250.3		0.7		
					Total Mean Difference			
*Title I districts					-0.33 (Not significant)			

Table 10  
English Reading Test  
Tenth Grade

DISTRICT	1970-71 10th		1971-72 10th		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
Arrochavis	337	351.2	349	349.3		1.9		X
Comerio	235	349.7	237	349.8	0.1			
Cunabo	139	351.4	149	356.7	5.3		X	
Las Marías	57	350.4	74	347.8		2.6	X	
Navuya	250	350.8	220	349.6		0.2		
Corozal	367	349.8	423	349.7		0.1		
Camuy	185	353.6	246	353.1		0.5		
Manatí	261	349.5	450	351.6	2.1			
Cayey	563	355.0	563	353.7		1.3		
Curabo	187	353.2	204	351.8		1.4		
Fajardo	315	356.4	395	358.2	1.8			
Juncos	237	357.8	265	353.5		4.3	X	
Aguadilla	521	356.6	518	355.9		0.7		
Cabo Rojo	244	360.3	274	360.6	0.3			
Guánica	173	353.6	162	356.9	3.3		X	
Peñuelas	205	353.7	202	353.9	0.2			
Dorado	181	351.5	185	352.2	0.7			
Toa Baja	461	353.8	580	355.7	1.9			X
*Title I districts					Total Mean Difference 0.2 Not significant			

Table 11-A

Spanish Reading Test  
 Comparison of Test Scores for the Same Group of Students  
 in Two Consecutive Years  
 Urban Zone

DISTRICT	: 1970-71 - 4th		: 1971-72 -5th		: Difference		: Level of Significance	
	: N	: $\bar{X}$	: N	: $\bar{X}$	: /	: -	: 1%	: 5%
*Orocovis	: 140	: 226.0	: 278	: 233.4	: 7.4	:	: X	:
* Comerfo	: 172	: 227.0	: 200	: 233.2	: 6.2	:	: X	:
*Munabo	: 125	: 228.0	: 118	: 235.0	: 7.0	:	: X	:
*Las Marfas	: 54	: 224.0	: 63	: 233.0	: 9.0	:	: X	:
*Jayuya	: 138	: 227.7	: 149	: 230.9	: 3.2	:	: X	:
*Corozal	: 169	: 223.0	: 216	: 228.0	: 5.0	:	: X	:
Manatí	: 279	: 227.1	: 278	: 233.4	: 6.3	:	: X	:
Gurabo	: 97	: 228.0	: 106	: 233.2	: 5.2	:	: X	:
Fajardo	: 282	: 231.0	: 332	: 235.0	: 4.0	:	: X	:
Cabo Rojo	: 174	: 232.1	: 165	: 238.0	: 5.9	:	: X	:
Peñuelas	: 108	: 226.5	: 155	: 231.0	: 4.5	:	: X	:
Dorado	: 113	: 219.4	: 174	: 232.5	: 13.1	:	: X	:
					: Total Mean Difference			
*Title I districts					: 6.4 Significant			

Table 11-b

Spanish Reading Test  
 Comparison of Test Scores for the same Groups  
 of Students in two consecutive years  
 Rural Zone

DISTRICT	1970-71 4th		1971-72 5th		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
*Orocovis	514	227.0	472	232	5.0		X	
*Comerio	309	227.0	317	231.7	4.7		X	
*Maunabo	205	226.0	192	231.0	5.0		X	
Las Marías	162	225.1	143	231.0	5.9		X	
*Jayuya	14	226.0	288	230.5	4.5		X	
Corozal	544	226.9	529	231.9	5.0		X	
Manatí	383	225.0	351	229.2	4.2		X	
Gurabo	300	225.0	266	231.0	6.0		X	
Fajardo	118	228.0	116	231.9	3.9		X	
Cabo Rojo	348	228.2	342	233.0	4.8		X	
Peñuelas	350	226.6	317	232.3	5.7		X	
Dorado	315	224.7	529	231.9	7.2		X	
*Title I Districts					Total Mean Difference 5.15 Significant at 1% level			

Table 12-A

Spanish Reading Test  
 Comparison of Test Scores for the Same Groups of Students  
 Urban Zone

DISTRICT	: 1970-71 -7th		: 1971-72-8th		: Difference		: Level of Significance	
	: N	: $\bar{X}$	: N	: $\bar{X}$	: /	: -	: 1%	: 5%
*Orocovis	: 162	: 239.0	: 150	: 245.1	: 6.1	:	: X	:
*Comerio	: 191	: 240.9	: 168	: 246.2	: 5.3	:	: X	:
*Maunabo	: 122	: 240.0	: 114	: 246.2	: 5.3	:	: X	:
*Las Marfas	: 67	: 240.0	: 58	: 247.8	: 7.8	:	: X	:
*Jayuya	: 142	: 242.4	: 126	: 247.3	: 4.9	:	: X	:
*Corozal	: 231	: 237.2	: 216	: 242.8	: 5.6	:	: X	:
Manatí	: 493	: 240.0	: 435	: 245.0	: 5.0	:	: X	:
Gurabo	: 313	: 237.6	: 224	: 242.1	: 4.5	:	: X	:
Fajardo	: 358	: 243.8	: 345	: 248.5	: 4.7	:	: X	:
Cabo Rojo	: 216	: 244.8	: 202	: 249.9	: 5.1	:	: X	:
Peñuelas	: 160	: 241.2	: 161	: 246.9	: 5.7	:	: X	:
Dorado	: 148	: 239.3	: 151	: 243.8	: 4.5	:	: X	:
					: Total Mean Difference			
*Title I districts					: 5.45 Significant at 1% level			



Table 12 b

## SPANISH READING TEST

COMPARISON OF TEST SCORES FOR THE SAME GROUP OF STUDENTS  
IN TWO CONSECUTIVE YEARS  
RURAL ZONE

DISTRICT	1970-71 7th		1971-72 8th		Difference		Level of Significance	
	N	$\bar{X}$	N	$\bar{X}$	+	-	1%	5%
*Orocovis	392	239.5	333	244.5	5.0		x	
*Comerio	154	238.1	157	242.1	4.0		x	
*Maunabo	92	237.1	73	241.8	4.7		x	
*Las Marías	71	237.2	59	240.8	3.6		x	
*Jayuya	143	238.5	136	242.4	3.9		x	
*Corozal	185	238.2	245	241.1	2.9		x	
Manatí	79	240.0	83	240.0	0			
Gurabo	37	236.0	32	240.3	4.3		x	
Fajardo								
Cabo Rojo	179	242.6	145	249.0	6.4		x	
Peñuelas	188	238.4	152	245.0	6.6		x	
Dorado	143	238.8	138	242.8	3.0		x	
*Title I Districts					Total Mean Difference			
					3.7 Significant at 1% level			

Table 13

SPANISH READING TEST  
COMPARISON OF TEST SCORES FOR THE SAME GROUPS OF STUDENTS IN  
TWO CONSECUTIVE YEARS

DISTRICT	1970-71 10th		1971-72 11th		Difference		Level of Significance		
	N	$\bar{X}$	N	$\bar{X}$	+	-	Significance		
							1%	5%	
*Orocovis	347	251.1	292	251.8	0.7				
*Comerfo	239	251.8	178	254.0	2.2			x	
*Maunabo	131	253.4	120	257.4	4.0		x		
*Las Marfas	53	253.4	47	259.5	6.1		x		
*Jayuya	253	252.6	224	255.7	3.1		x		
*Corozal	357	250.0	313	254.0	4.0		x		
Manatí	295	249.1	350	254.0	4.9		x		
Gurabo	186	251.7	168	255.9	4.2		x		
Fajardo	350	254.5	325	256.6	2.1			x	
Cabo Rojo	230	255.8	220	260.3	4.5		x		
Peñuelas	-	-	167	256.8					
Dorado	181	253.7	158	255.9	2.7		x		
*Title I districts					Total Mean Difference				
					3.20 Significant at 1% level				

DIFFERENCE OF THE  
MEANS OF THE 4th GRADE ON THE  
SPANISH READING TEST ADMINISTERED IN APRIL, 1972

	N			Basic Statistics			Statistics for comparison				Test of significance C-R	
	ZONE			SD	Mean	SE	$\bar{X}_1 - \bar{X}_2$	SE <sub>c</sub>	$\frac{\bar{X}_1 - \bar{X}_2}{SE_c}$	N <sub>t</sub>		
	U	R	T									
BETWEEN	789			12.4	26.3	0.441						
6 Tit. I Districts		2131		11.0	26.1	0.238	0.200	0.502	0.399	2920		9%
12 Non Tit. I	2962			13.5	31.1	0.248						
		4436		11.8	27.3	0.177	3.800	0.305	12.466	7398		1%
6 Tit. I Districts	789			12.4	26.3	0.441						
12 Non Tit. I	2962			13.5	31.1	0.248	4.800	0.506	9.479	3751		1%
6 Tit. I Districts		2131		11.0	26.1	0.238						
12 Non Tit. I		4436		11.8	27.3	0.177	1.200	0.297	4.041	6567		1%
6 Tit. I Districts			2920	11.4	26.1	0.211						
12 Non Tit. I			7398	12.7	28.8	0.148	2.700	0.258	10.485	10318		1%

DIFFERENCE OF THE MEANS  
OF THE 5th GRADE ON THE SPANISH  
READING TEST ADMINISTERED IN APRIL 1972

	N		Basic Statistics				Statistics for comparison				Test of significance C-R 1.96 5%			
			Zone		T	SD	Mean	SE	$\bar{X}_1 - \bar{X}_2$	SE <sub>c</sub>		$\frac{\bar{X}_1 - \bar{X}_2}{SE_c}$		
	U	R	R	U							N <sub>1</sub>		N <sub>2</sub>	
BETWEEN														
6 Tit. I Districts	894			14.0	33.7		0.468							
		1941		13.2	34.4		0.300		0.700	0.556	1.259		No	
12 Non Tit. I	1210			15.8	39.1		0.454							
"		1642		13.9	33.7		0.343		5.400	0.569	9.487		1%	
6 Tit. I Districts	894			14.0	33.7									
		1941		15.8	39.1				5.400	0.616	7.000		1%	
12 Non Tit. I	1210			13.2	34.4		0.300							
6 Tit. I Districts		1642		13.9	33.7		0.343		0.700	0.458	1.537		No	
12 Non Tit. I		2835		13.5	34.1	2835	0.254							
6 Tit. I Districts		2852		15.0	36.0	2852	0.281		1.900	0.378	5.021		1%	
12 Non Tit. I														

TABLE 16  
 DIFFERENCE OF THE MEANS  
 OF THE 6th GRADE ON THE SPANISH  
 READING (Battery) TEST ADMINISTERED IN APRIL 1972

BETWEEN	N			Basic Statistics			Statistics for comparison				Test of significance C-R 1.96 5%	
	Zone			T	SD	Mean	SE	N <sub>t</sub>	$\bar{X}_1 - \bar{X}_2$	SE <sub>c</sub>		$\frac{\bar{X}_1 - \bar{X}_2}{SE_c}$
	U	R										
6 Tit. I Districts	878				8.1	24.2	0.273	2607	1.100	0.337	3.263	1%
12 Non Tit. I	2934	1729			8.2	23.1	0.197	6897	2.100	0.217	9.698	1%
6 Tit. I Districts	878				8.1	24.2	0.273	3812	2.100	0.321	6.545	1%
12 Non Tit. I	2934	3963			9.1	26.3	0.168	5692	1.100	0.240	4.585	1%
6 Tit. I Districts		1729			8.2	23.1	0.197	9504	1.600	0.193	8.287	1%
12 Non Tit. I		3963	2607	6897	8.6	24.2	0.137					
6 Tit. I Districts					8.2	23.5	0.161					
12 Non Tit. I					8.9	25.1	0.107					

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Table 17

DIFFERENCE OF THE MEANS OF THE 7th GRADE  
ON THE SPANISH  
READING TEST ADMINISTERED IN APRIL 1972

	N		BASIC STATISTICS				Statistics for comparison				Test of significance C. R. 1.96 5%	
	ZONE		SD	Mean	SE	Nt	$\bar{X}_1 - \bar{X}_2$	SEc	$\frac{\bar{X}_1 - \bar{X}_2}{SEc}$			
	U.	R.										T
BETWEEN												
6 Title I Districts	1019		12.9	33.9	0.404	2192	0.500	0.513	0.975			
12 NON-Title I Districts		1173	10.8	33.4	0.315	5986	0.200	0.339	0.590			
	3863		13.0	35.7	0.209							
		2123	12.3	35.5	0.267							
6 Title I Districts	1019		12.9	33.9	0.404	4882	1.800	0.455	3.956			1%
12 NON-Title I Districts		1173	13.0	35.7	0.209							
	3863		10.8	33.4	0.315							
		2123	12.3	35.5	0.267	3296	2.100	0.413	5.083			1%
6 Title I Districts			11.8	33.6	0.252	8178	2.000	0.301	6.649			1%
12 NON-Title I Districts		5986	12.7	35.6	0.164							

Table 18

DIFFERENCE OF THE MEANS OF THE 8th GRADE  
ON THE SPANISH  
READING TEST ADMINISTERED IN APRIL 1972

	N		BASIC STATISTICS				Statistics for comparison				Test of significance C.R. 1.96 5%	
	ZONE		SD	Mean	SE	Nt	$\bar{X}_1 - \bar{X}_2$	SEc	$\bar{X}_1 - \bar{X}_2$	SEc		
	U.	R.										T
BETWEEN												
6 Title I Districts	832		13.5	41.10	0.468							
6 NON-Title I Districts	1518	1003	12.5	37.60	0.395	1835	3.5	0.612	5.717	1%		
			14.5	41.90	0.372							
			13.4	40.60	0.571	2068	1.300	0.682	1.906			
6 Title I Districts	832		13.5	41.10	0.468							
6 NON-Title I Districts	1518	1003	14.5	41.90	0.372	2350	0.800	0.598	1.338			
			12.5	37.60	0.395							
			13.4	40.60	0.571	1553	3.000	0.694	4.320	1%		
6 Title I Districts			13.1	39.2	0.306							
6 NON-Title I Districts		2068	14.2	41.6	0.312	3903	2.400	0.437	5.491	1%		







Table 21  
 DIFFERENCE OF THE MEANS OF THE 6TH GRADE  
 ON THE ENGLISH READING (Battery) TEST  
 ADMINISTERED IN APRIL 1972

BETWEEN	N		Basic Statistics				Statistics for comparison				Test of Significance C - R 1.96 5%			
	ZONE		U.	R.	T.	SD	Mean	SE	N <sub>1</sub> - N <sub>2</sub>	SE <sub>c</sub>		X <sub>1</sub> - X <sub>2</sub>		
	U.	R.												
6 Title I Districts	859		8.6	20.2	0.173	1745					1.600	0.342	4.685	1%
12 Non Title I Districts	2879		10.6	24.8	0.198	3974					3.900	0.248	15.696	1%
6 Title I Districts	859		8.6	20.2	0.173									
12 Non Title I Districts	2879		10.6	24.8	0.198						4.600	0.354	13.004	1%
6 Title I Districts		1745	8.6	18.6	0.173									
Non Title I Districts		3974	9.5	20.9	0.151						2.300	0.231	9.967	1%
6 Title I Districts			7.8	19.2	0.153	2604								
Non Title I Districts			10.1	22.6	0.122	6853					3.400	0.196	17.385	1%

DIFFERENCE OF THE MEANS OF THE 7TH GRADE  
ON THE ENGLISH READING TEST ADMINISTERED  
IN APRIL 1972

Table 22

BETWEEN	N		Basic Statistics				Statistics for comparison				Test of Signi- ficance C-P
	ZONE		SD	Mean	SE	N	$\bar{X}_1 - \bar{X}_2$	SE <sub>c</sub>	$\bar{X}_1 - \bar{X}_2$	SE <sub>c</sub>	
	U.	R.									
6 Title I Districts	987		9.9	24.6	0.315	2154	0.100	0.407	0.246		
12 Non Title I Dist.	3943	1167	8.8	24.7	0.258	6058	0.900	0.312	2.882		
6 Title I Districts	987		9.9	24.6	0.315	4930	3.600	0.369	9.746		1%
12 Non Title I Dist.	3943	1167	12.1	28.2	0.193	3282	2.600	0.356	7.313		1%
6 Title I Districts		2115	9.3	24.7	0.200	8212	3.200	0.251	12.735		1%
12 Non Title I Dist.		6058	11.8	27.9	0.152						

DIFFERENCE OF THE MEANS OF THE 11TH GRADE  
ON THE ENGLISH READING TEST ADMINISTERED  
IN APRIL 1972

Table 23

BETWEEN	R		Basic Statistics				Statistics for Comparison					
	ZONE		U.	R.	T.	SD	Mean	SE	N	$\bar{X}_1 - \bar{X}_2$	SD	SE
	U.	R.										
6 Title I Districts	1452		9.4	24.1	0.247			5496	3.909	0.311	12.557	
12 Non Title I Dist.	4044		12.0	28.0	0.189							

CS



**TABLE 24**  
**Interquartile Ranges of Test Scores**  
**Spanish Reading**  
**Grades 4, 7 and 10**

DISTRICTS	4th				7th				10th			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
*Orocovis	N : 218	: 182	: 157	: 90	: 146	: 168	: 151	: 104	: 130	: 89	: 70	: 58
	% : 33.7	: 28.1	: 24.3	: 13.9	: 25.7	: 29.5	: 26.5	: 18.3	: 37.5	: 25.6	: 20.2	: 16.7
*Comerio	N : 129	: 137	: 139	: 113	: 113	: 120	: 104	: 72	: 82	: 54	: 57	: 37
	% : 24.9	: 26.4	: 26.8	: 21.8	: 27.6	: 29.3	: 25.4	: 17.6	: 35.7	: 23.5	: 24.8	: 16.1
*Maunabo	N : 58	: 84	: 97	: 85	: 65	: 72	: 59	: 44	: 34	: 30	: 42	: 41
	% : 17.9	: 25.9	: 29.9	: 26.2	: 27.1	: 30.0	: 24.6	: 18.3	: 23.1	: 20.4	: 28.6	: 27.9
*Las Mariñas	N : 88	: 61	: 64	: 58	: 40	: 32	: 33	: 36	: 20	: 27	: 12	: 14
	% : 32.5	: 22.5	: 23.6	: 23.6	: 28.4	: 22.7	: 23.4	: 25.5	: 27.4	: 37.0	: 16.4	: 19.2
*Jayuya	N : 180	: 106	: 110	: 91	: 84	: 83	: 83	: 72	: 75	: 68	: 46	: 39
	% : 37.0	: 21.8	: 22.6	: 17.7	: 26.1	: 25.8	: 25.8	: 22.4	: 32.9	: 29.8	: 20.2	: 17.1
*Corozal	N : 292	: 163	: 122	: 96	: 194	: 114	: 114	: 89	: 131	: 119	: 90	: 72
	% : 43.4	: 24.2	: 18.1	: 14.3	: 38.0	: 22.3	: 22.3	: 17.4	: 31.8	: 28.9	: 21.8	: 17.5
Camuy	N : 126	: 136	: 147	: 122	: 96	: 93	: 112	: 96	: 57	: 59	: 61	: 66
	% : 23.7	: 25.6	: 27.7	: 23.0	: 24.2	: 23.4	: 28.2	: 24.2	: 23.5	: 24.3	: 25.1	: 27.2
Manatí	N : 248	: 141	: 134	: 92	: 137	: 113	: 126	: 106	: 118	: 107	: 86	: 107
	% : 40.3	: 22.9	: 21.8	: 15.0	: 28.4	: 23.4	: 26.1	: 22.0	: 29.2	: 25.6	: 20.6	: 25.6
Cayey	N : 136	: 224	: 326	: 339	: 221	: 217	: 196	: 201	: 121	: 171	: 143	: 126
	% : 13.3	: 21.9	: 31.8	: 33.1	: 26.5	: 26.0	: 23.5	: 24.1	: 21.6	: 30.5	: 25.5	: 22.5
Gurabo	N : 86	: 80	: 91	: 92	: 99	: 75	: 70	: 76	: 66	: 47	: 44	: 43
	% : 24.6	: 22.9	: 26.1	: 26.4	: 30.9	: 23.4	: 21.9	: 23.8	: 33.0	: 23.5	: 22.0	: 21.5
Fajardo	N : 115	: 122	: 111	: 168	: 99	: 94	: 106	: 125	: 82	: 101	: 96	: 115
	% : 22.3	: 23.6	: 21.5	: 32.6	: 23.3	: 22.2	: 25.0	: 29.5	: 20.8	: 25.6	: 24.4	: 29.7
Juncos	N : 170	: 129	: 112	: 93	: 220	: 101	: 90	: 59	: 50	: 67	: 73	: 75
	% : 33.7	: 25.6	: 22.2	: 18.5	: 46.8	: 21.5	: 19.1	: 12.6	: 18.9	: 25.3	: 27.5	: 28.3
Aguadilla	N : 198	: 209	: 286	: 295	: 139	: 159	: 157	: 214	: 132	: 131	: 113	: 150
	% : 20.0	: 21.2	: 28.9	: 29.9	: 20.8	: 23.8	: 23.5	: 32.0	: 25.1	: 24.9	: 21.5	: 28.5
Cabo Rojo	N : 62	: 106	: 131	: 135	: 57	: 87	: 118	: 153	: 48	: 52	: 83	: 84
	% : 12.8	: 21.9	: 27.1	: 38.2	: 13.7	: 21.0	: 28.4	: 36.9	: 18.0	: 19.5	: 31.1	: 31.5
Guánica	N : 70	: 74	: 87	: 86	: 49	: 69	: 60	: 70	: 52	: 27	: 41	: 42
	% : 22.1	: 23.3	: 27.4	: 27.1	: 19.8	: 27.8	: 24.2	: 28.2	: 32.1	: 16.7	: 25.3	: 25.9
Peñuelas	N : 122	: 108	: 126	: 102	: 85	: 101	: 123	: 112	: 39	: 54	: 55	: 49
	% : 26.6	: 23.6	: 27.5	: 22.3	: 20.2	: 24.0	: 29.2	: 26.6	: 19.8	: 27.4	: 27.9	: 24.9
Dorado	N : 192	: 82	: 84	: 57	: 79	: 76	: 81	: 83	: 47	: 50	: 50	: 39
	% : 46.3	: 19.8	: 20.2	: 13.7	: 24.8	: 23.8	: 25.4	: 26.0	: 25.3	: 26.9	: 26.9	: 21.0
Toa Baja	N : 412	: 264	: 279	: 241	: 303	: 249	: 211	: 223	: 208	: 137	: 127	: 112
	% : 34.4	: 22.1	: 23.3	: 20.2	: 0.7	: 25.3	: 21.4	: 22.6	: 35.6	: 23.5	: 21.7	: 19.2

\*Title I Districts

TABLE 25-a

INTERQUANTILE RANGES OF TEST SCORES  
SPANISH READING TEST  
FOURTH GRADE  
APRIL 1972

	PERCENTAGE OF STUDENTS WITHIN EARLY SCORES				
	3 - 25	26 - 50	51 - 75	76 - 100	N
18 district Sample N= 10,318	28.1	23.3	25.2	23.3	2,603
Title I Districts Total N= 2,920	33.0	25.1	23.6	18.3	689
NON-Title I Districts Total N= 7,398	26.2	22.6	25.9	25.3	1,914
					1,872

TABLE 25- b

INTERQUARTILE RANGES OF TEST SCORES  
 SPANISH READING TEST  
 SEVENTH GRADE  
 APRIL 1972

Group	PERCENTAGE OF STUDENTS WITHIN EACH QUANTILE									
	0 - 25	26 - 50	51 - 75	76 - 100	N	0 - 25	26 - 50	51 - 75	76 - 100	N
18 district Sample N = 8,178										
Title I Districts N = 2,192	27.2	24.7	24.4	23.7	1,994	1,935	417	19.0		
NON-Title I Districts N = 5,986	29.3	26.9	24.8	19.0	544	1,518	25.4			
	26.5	24.0	24.2	25.4	1,450					

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INTERQUARTILE RANGES OF TEST SCORES  
SPANISH READING TEST

TENTH GRADE

APRIL 1972

Group	PERCENTAGE OF STUDENTS WITHIN EACH QUARTILE								
	0 - 25	25 - 50	50 - 75	75 - 100	N	0 - 25	25 - 50	50 - 75	75 - 100
18 district Sample N = 5,440	1,492	27.4	1,390	25.6	1,287	22.7	1,209	23.5	
Title I Districts N = 1,437	472	32.8	387	26.9	317	22.1	261	18.	
NON-Title I Districts N = 4,003	1,020	25.5	1,003	25.0	972	24.3	1,008	25.2	

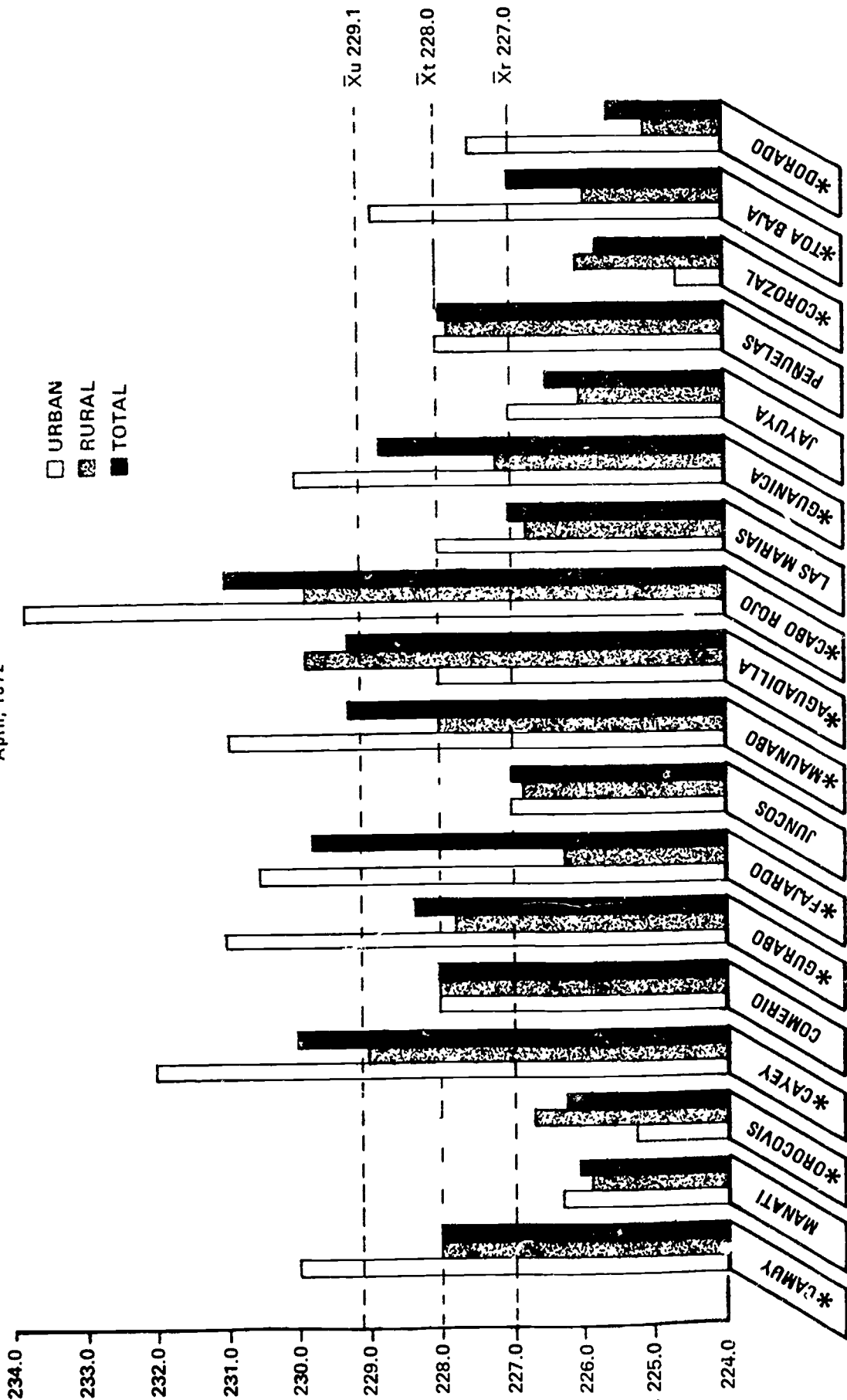


Table 26  
Rank Order by District  
Spanish Reading  
1971-1972

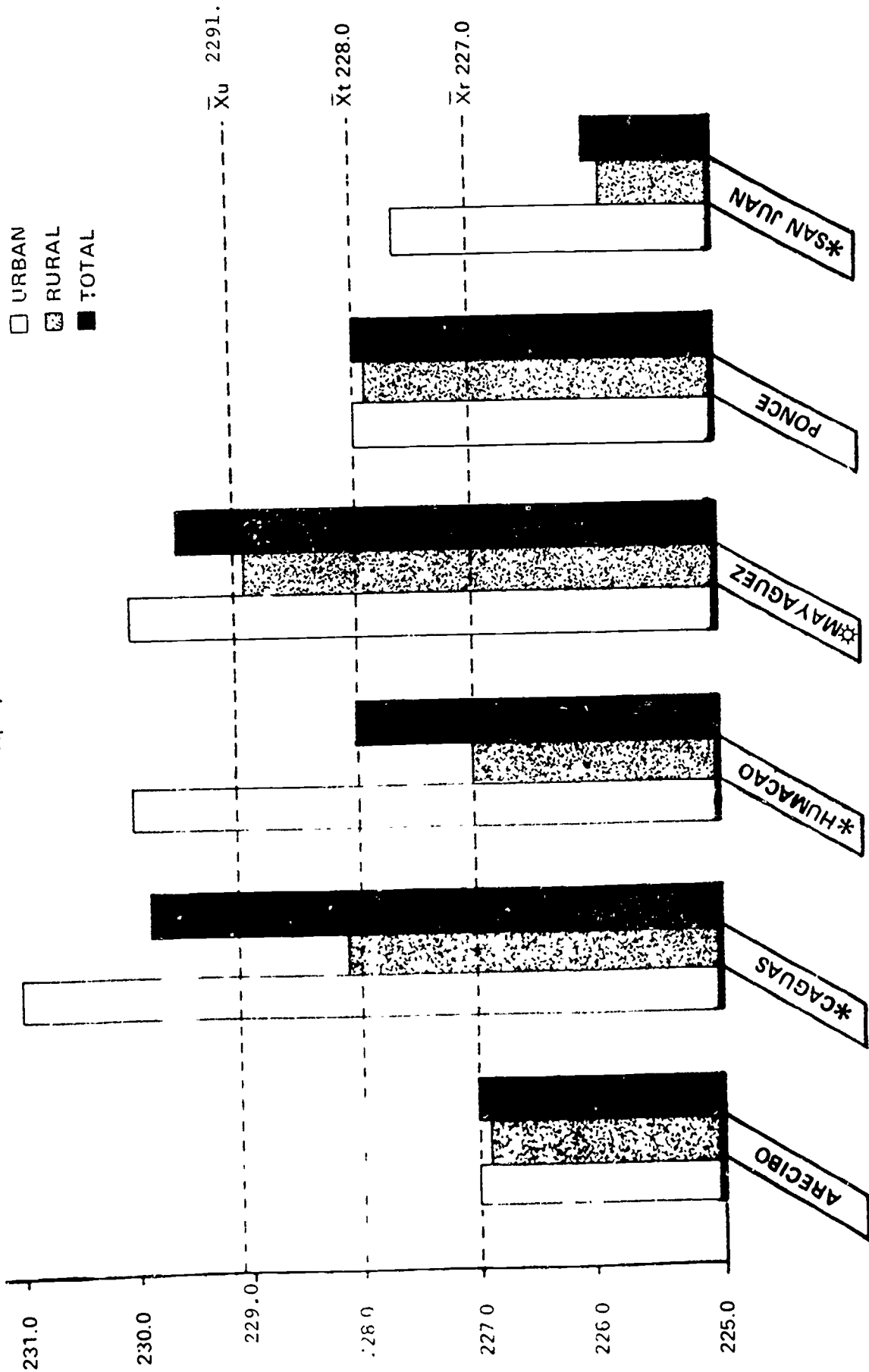
District	A 4th Grade	B 7th Grade	C 10th Grade	A+B+C	$\frac{A+B+C}{3}$	R/ QT
* Comerío	9	15	13.5	37.5	12.5	14
* Corozal	18	17	15	50	16.7	18
* Jayuya	13	9.5	16	38.5	12.8	15
* Las Marías	11	8	18	37	12.3	13
* Maunabo	4	16	2	22	7.3	7.5
* Orocovis	15	13	17	45	15	17
Cabo Rojo	1	1	1	3	1	1
Aguadilla	3	3	8	14	4.7	2.5
Camuy	7.5	5.5	6	19	6.3	5
Cayey	2	11	9	22	7.3	7.5
Dorado	17	7	10	34	11.3	10
Fajardo	6	4	4	14	4.7	2.5
Guánica	7.5	5.5	7	20	6.7	6
Gurabo	5	12	12	29	9.7	9
Juncos	14	18	3	35	11.7	11.5
Manatí	16	9.5	10	35.5	11.7	11.5
Peñuelas	10	2	5	17	5.7	4
Toa Baja	12	14	13.5	39.5	13.2	16

\* Title I Districts

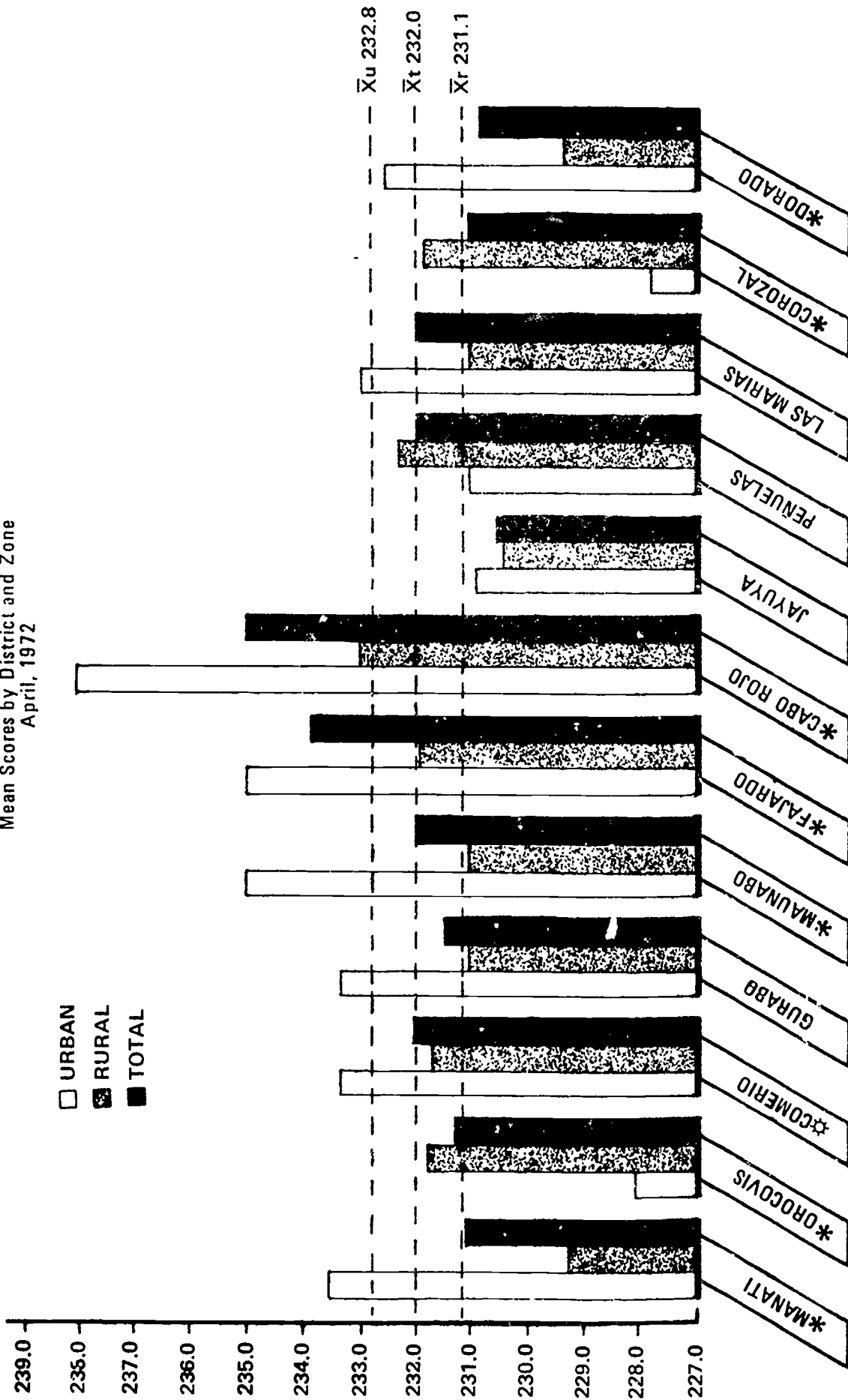
GRAPH 1-A  
 Spanish Reading Test - Fourth Grade  
 Mean Scores by District and Zone  
 April, 1972



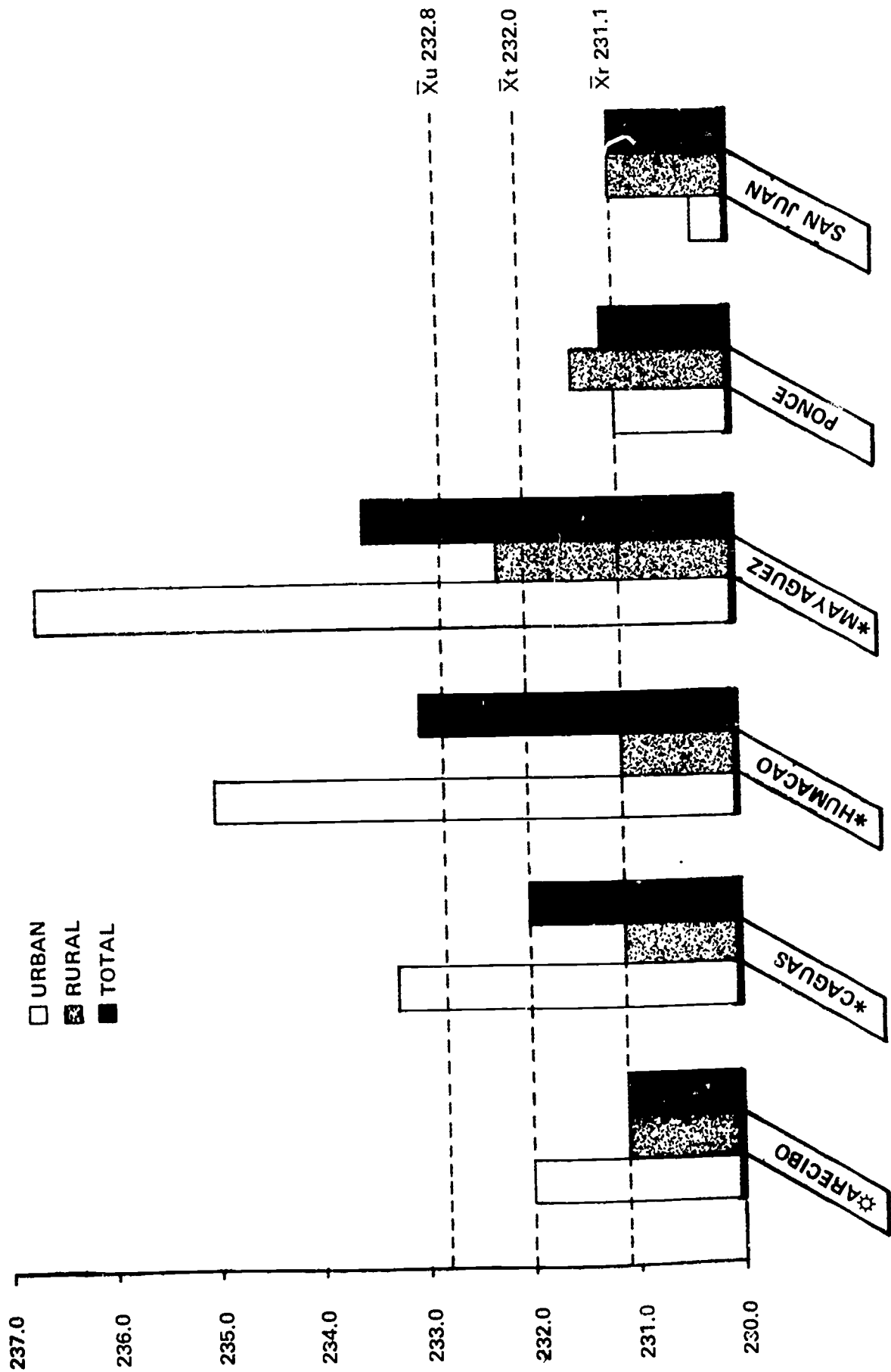
GRAPH 1-8  
 Spanish Reading Test Fourth Grade  
 Mean Scores by Regions and Zone  
 April, 1972



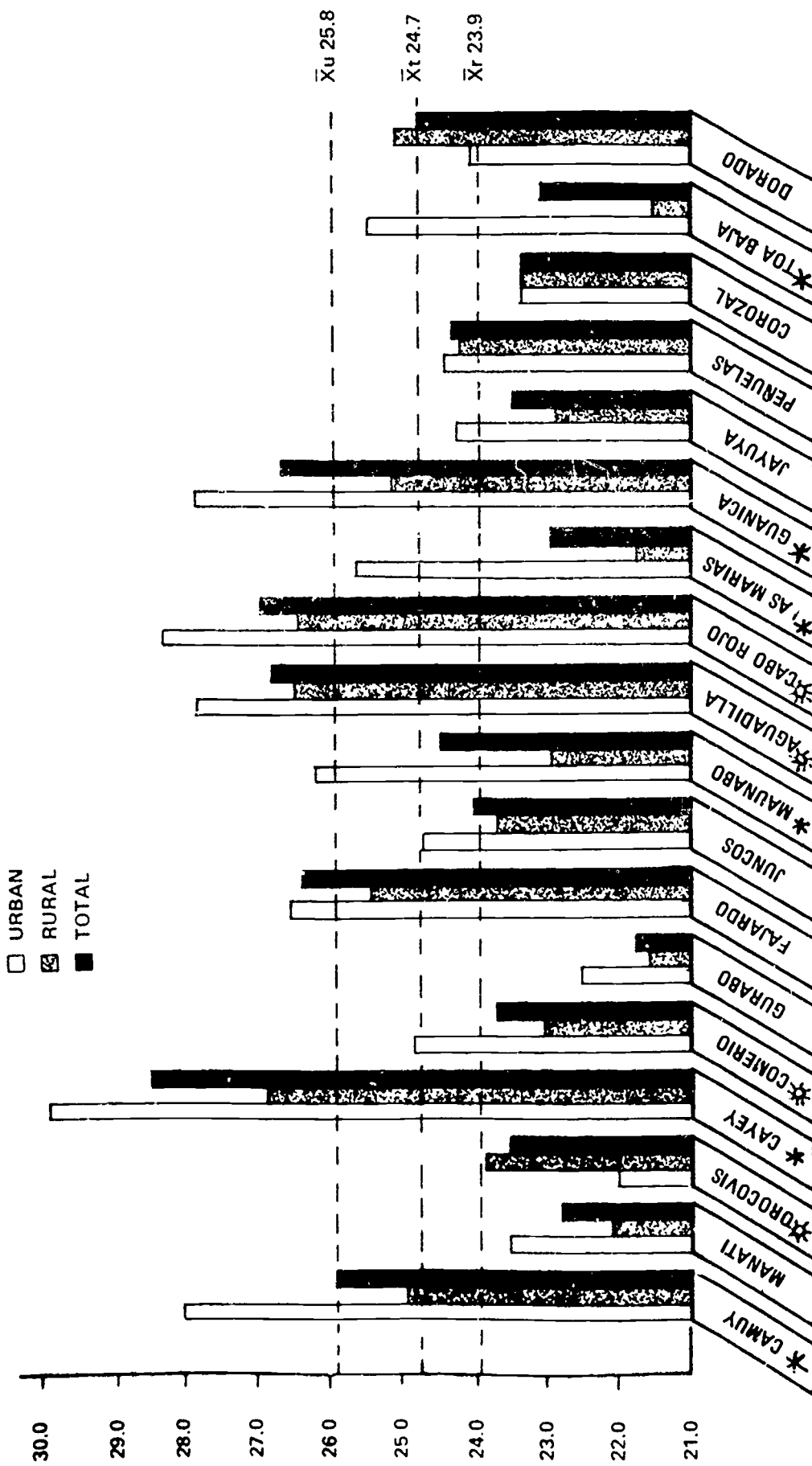
GRAPH 2-A  
 Spanish Reading Test - Fifth Grade  
 Mean Scores by District and Zone  
 April, 1972



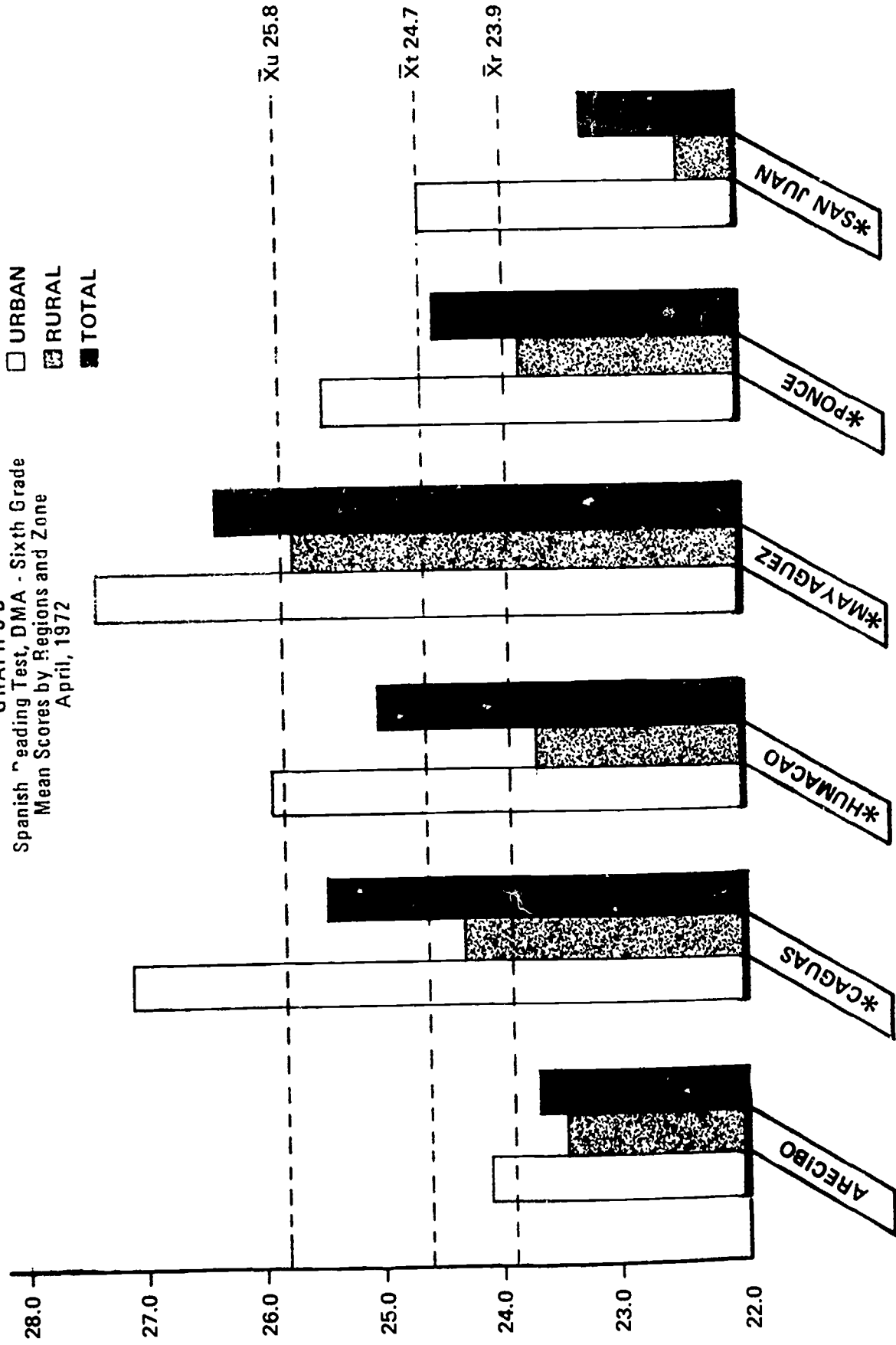
GRAPH 2-B  
 Spanish Reading Test - Fifth Grade  
 Mean Scores by Regions and Zone  
 April, 1972



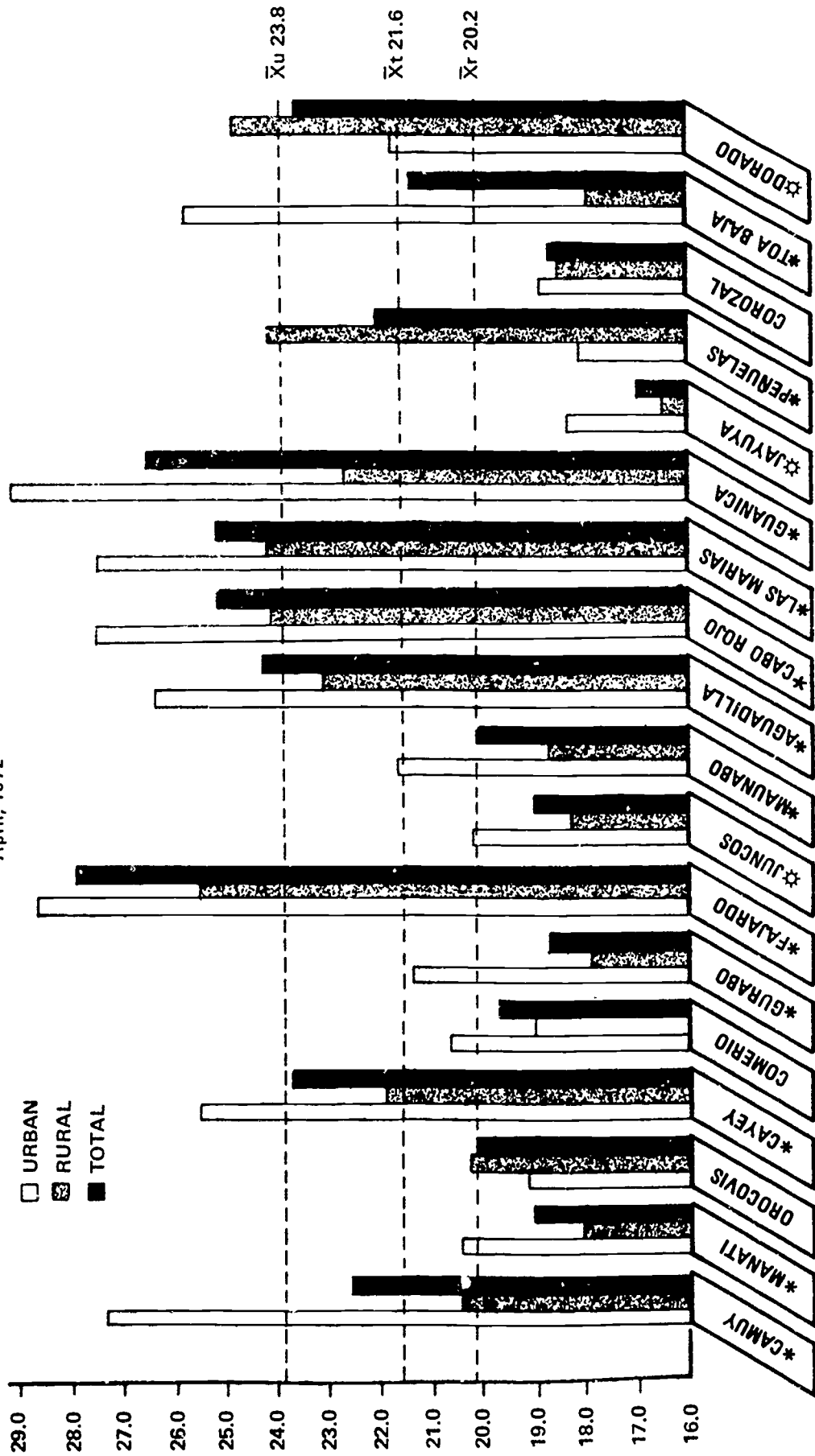
GRAPH 3-A  
 Spanish Reading Test, DMA - Sixth Grade  
 Mean Scores by District and Zone  
 April, 1972



GRAPH 3-8  
 Spanish Reading Test, DMA - Sixth Grade  
 Mean Scores by Regions and Zone  
 April, 1972

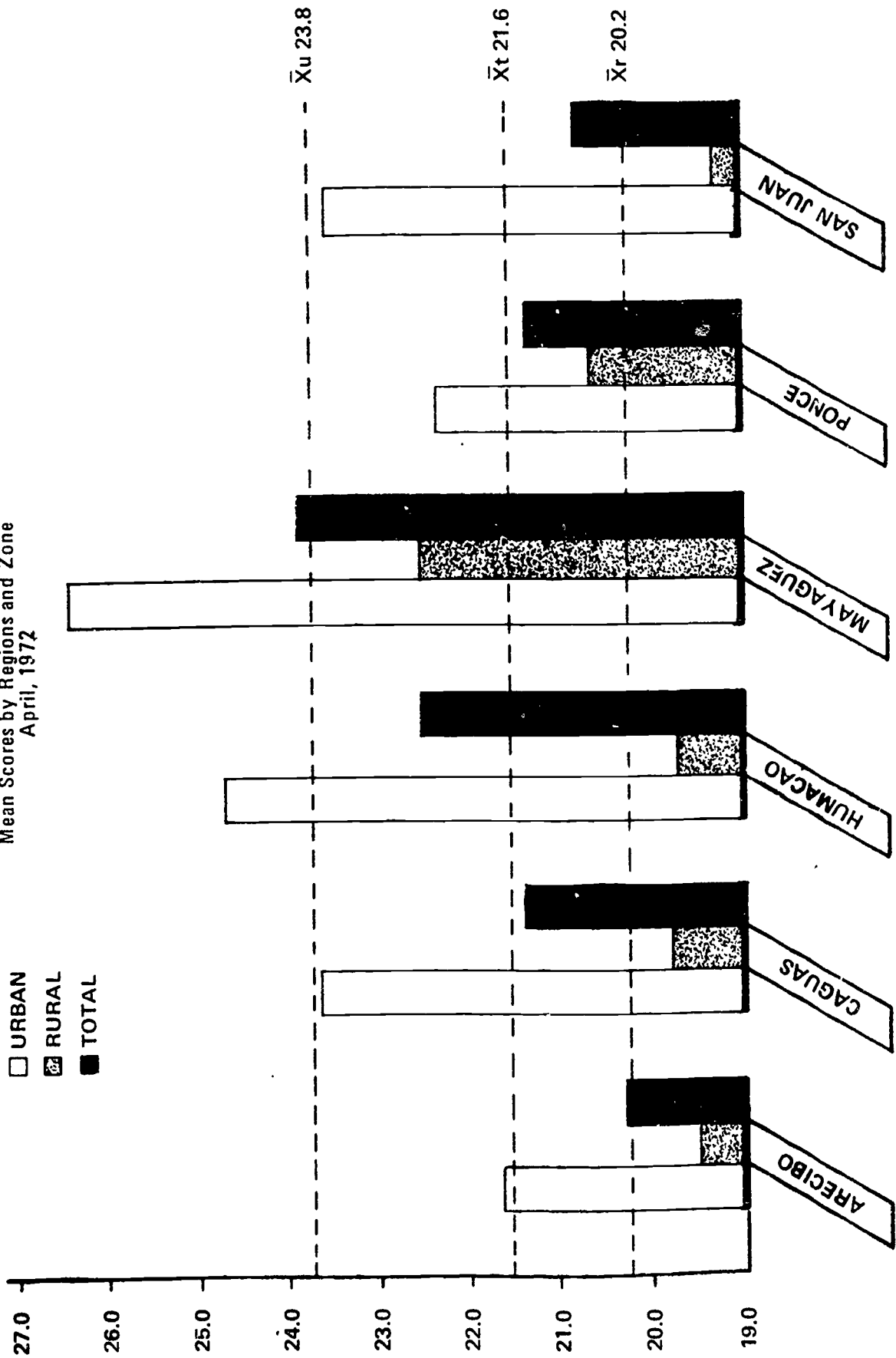


GRAPH 4-A  
 English Reading Test, DMA - Sixth Grade  
 Mean Scores by District and Zone  
 April, 1972

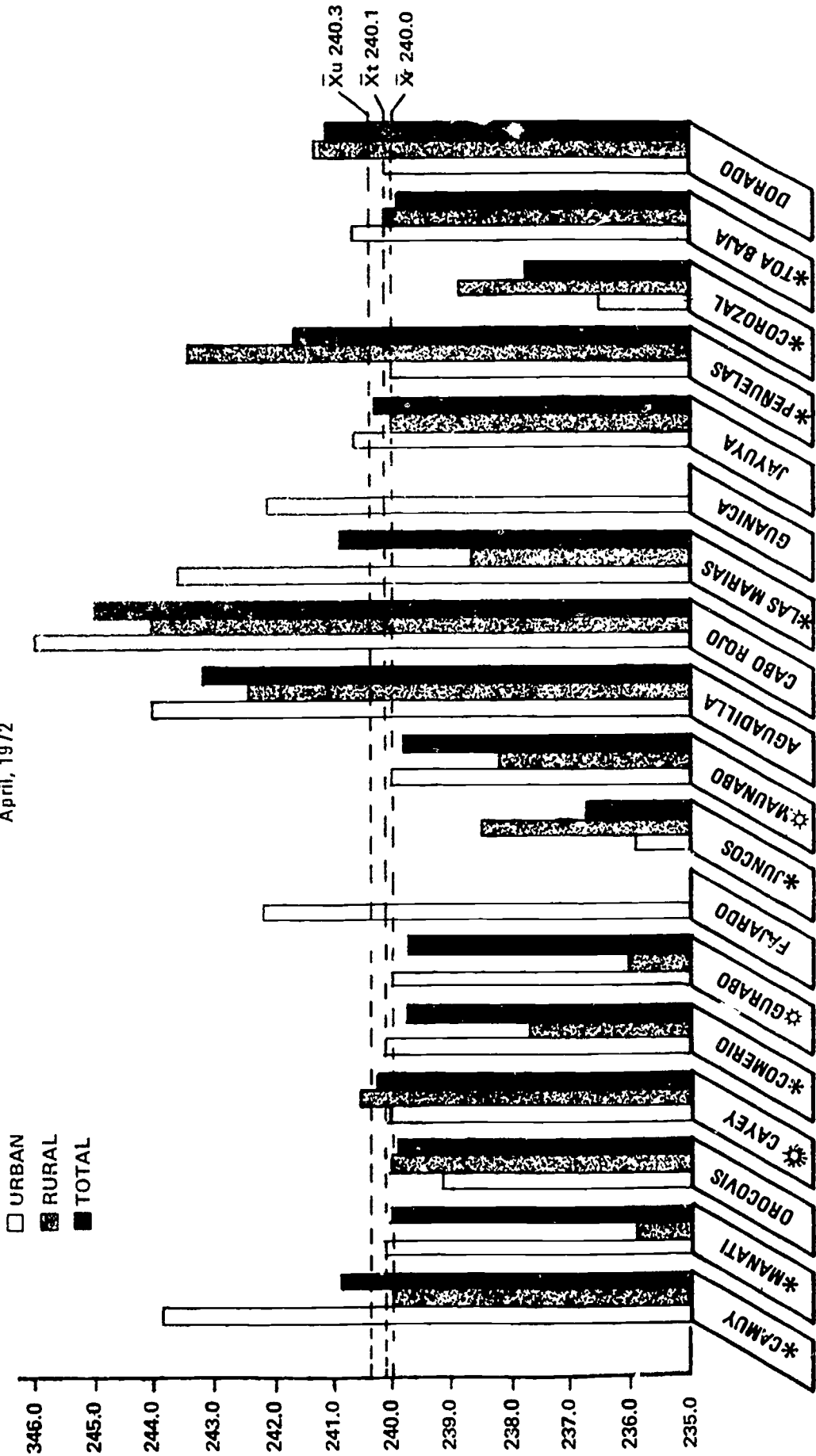




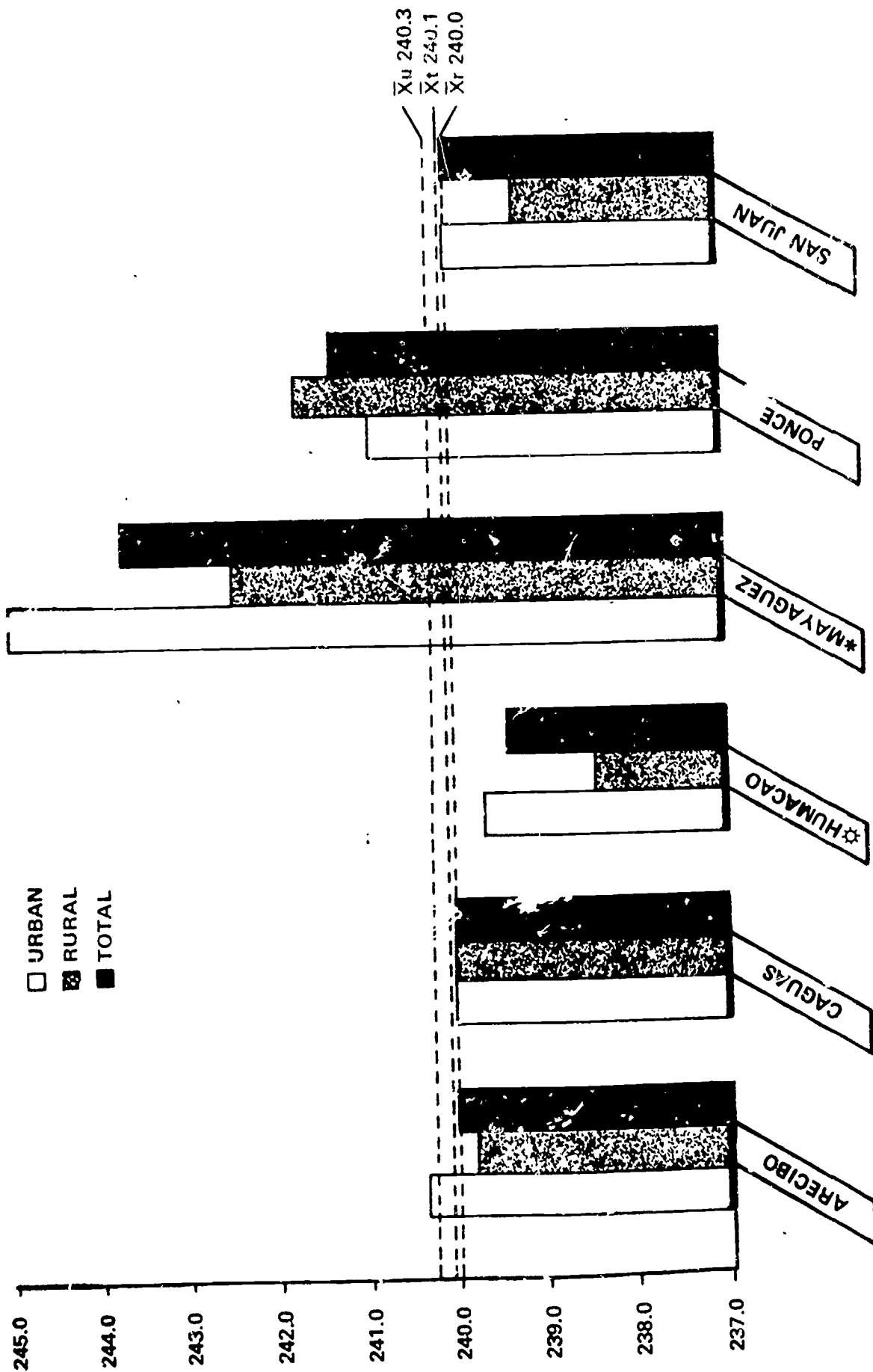
GRAPH 4-B  
 English Reading Test, DMA - Sixth Grade  
 Mean Scores by Regions and Zone  
 April, 1972



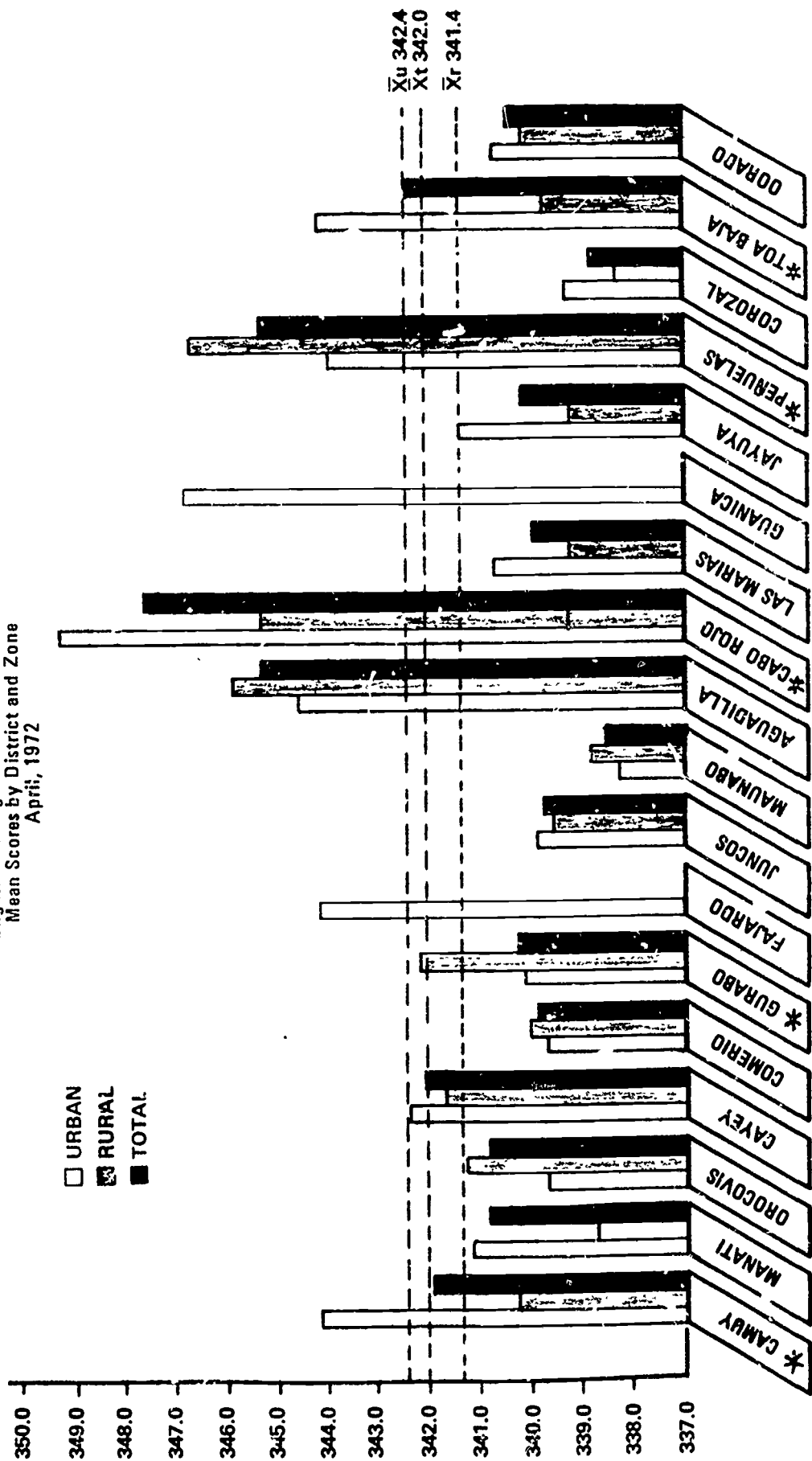
GRAPH 5-A  
 Spanish Reading Test - Seventh Grade  
 Mean Scores by District and Zone  
 April, 1972



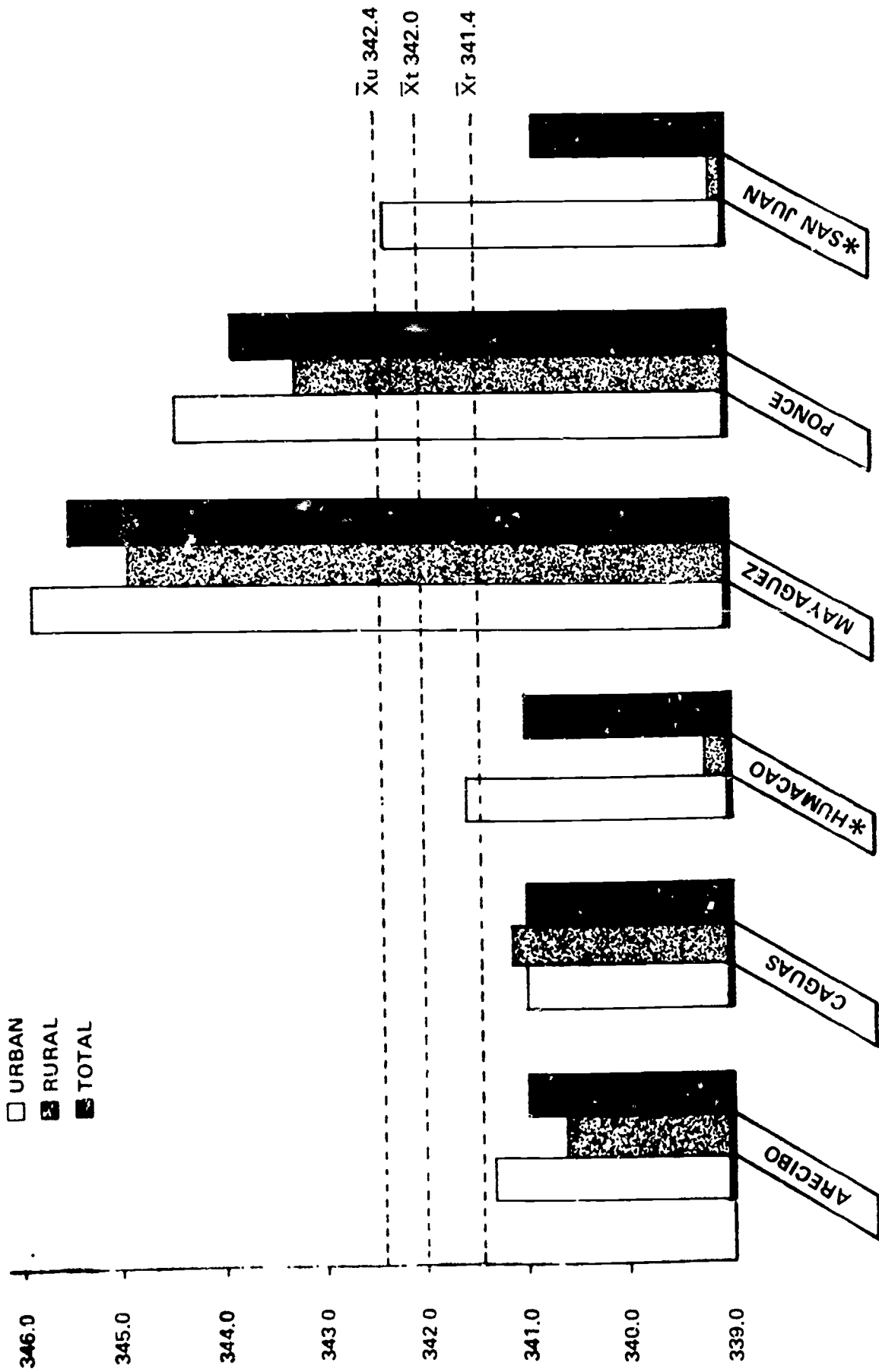
GRAPH 5-B  
 Spanish Reading Test - Seventh Grade  
 Mean Scores by Regions and Zone  
 April, 1972



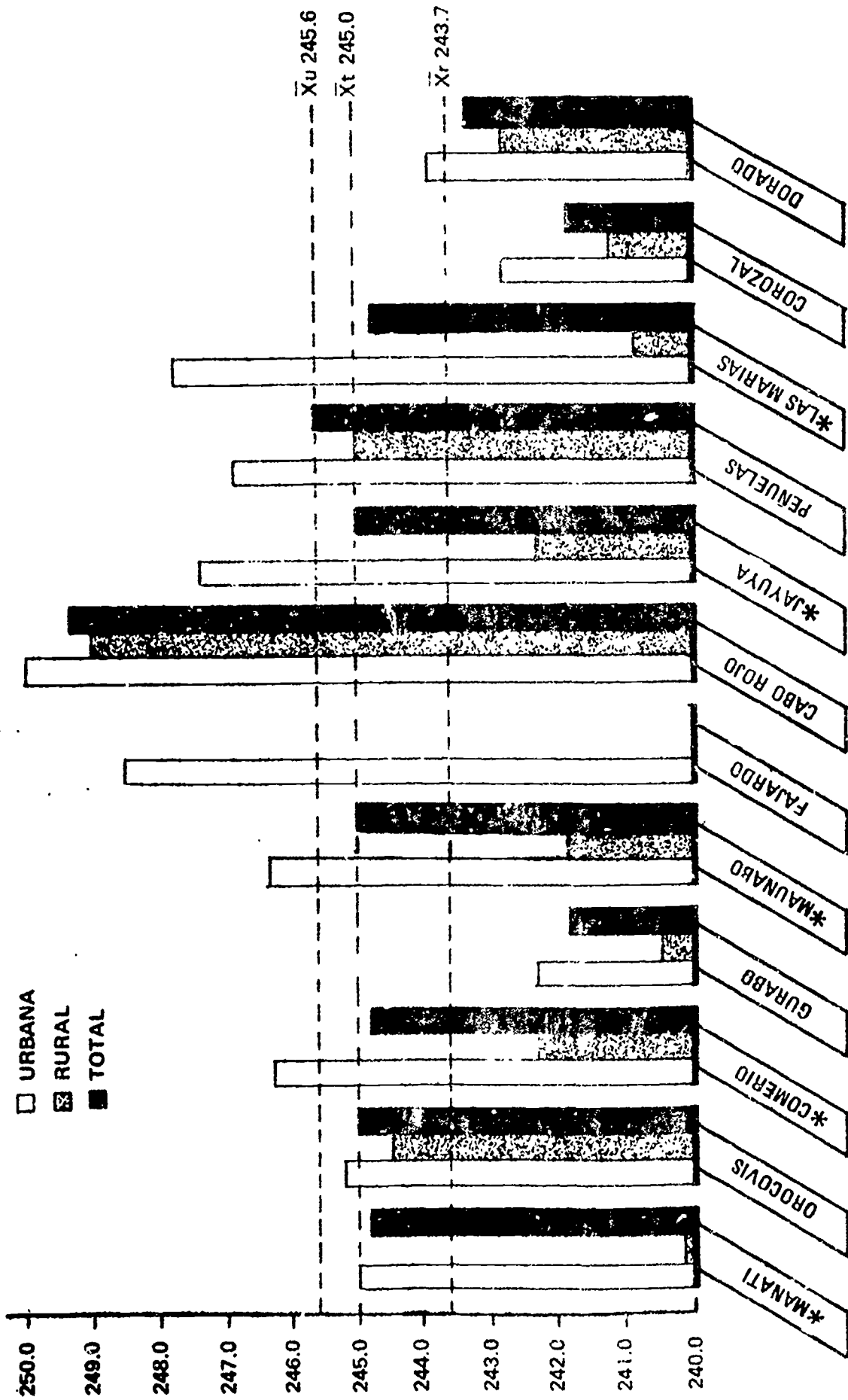
GRAPH 6-A  
 English Reading Test - Seventh Grade  
 Mean Scores by District and Zone  
 April, 1972



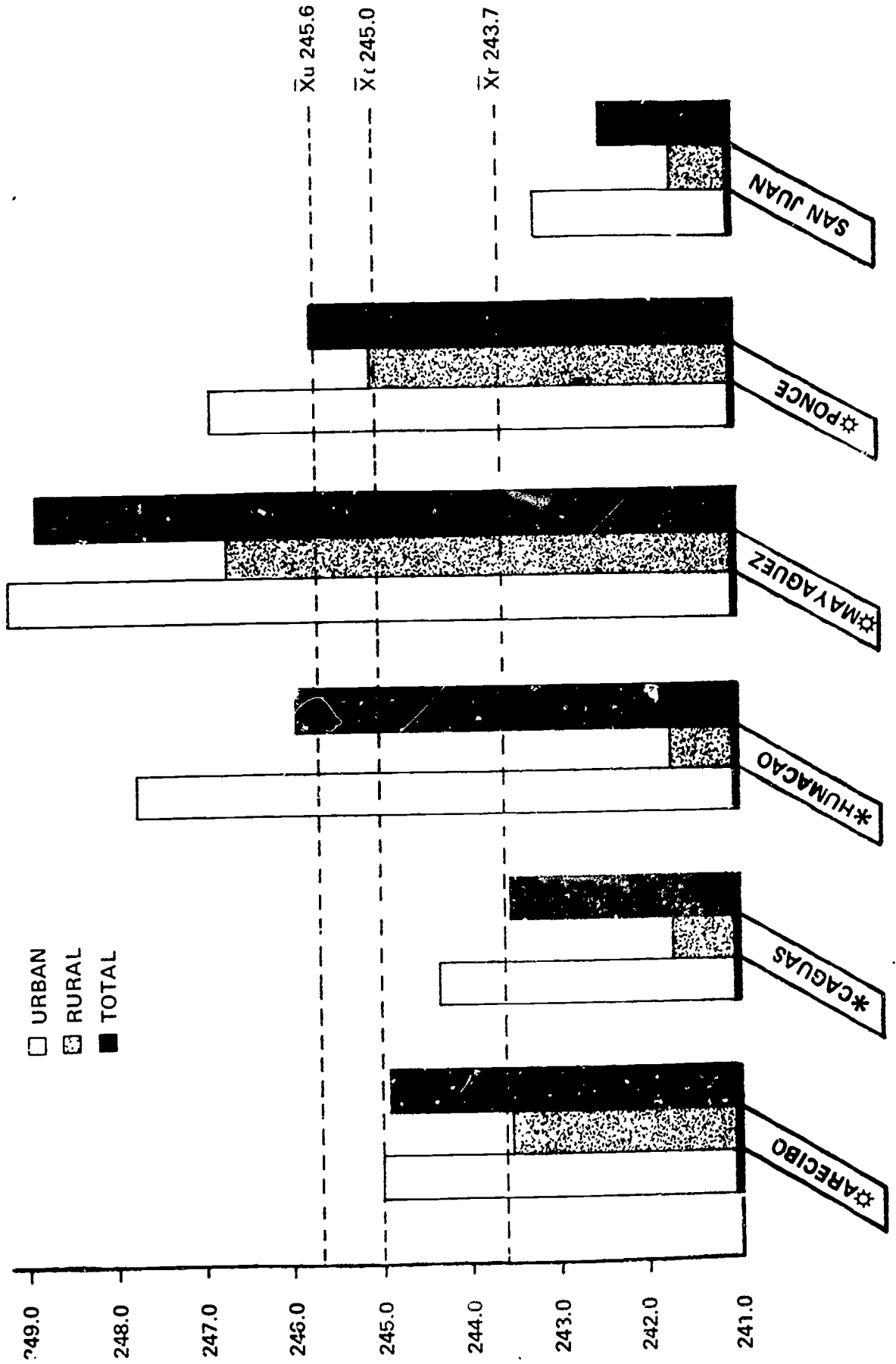
**GRAPH 6-B**  
**English Reading Test - Seventh Grade**  
**Mean Scores by Regions and Zone**  
**April, 1972**



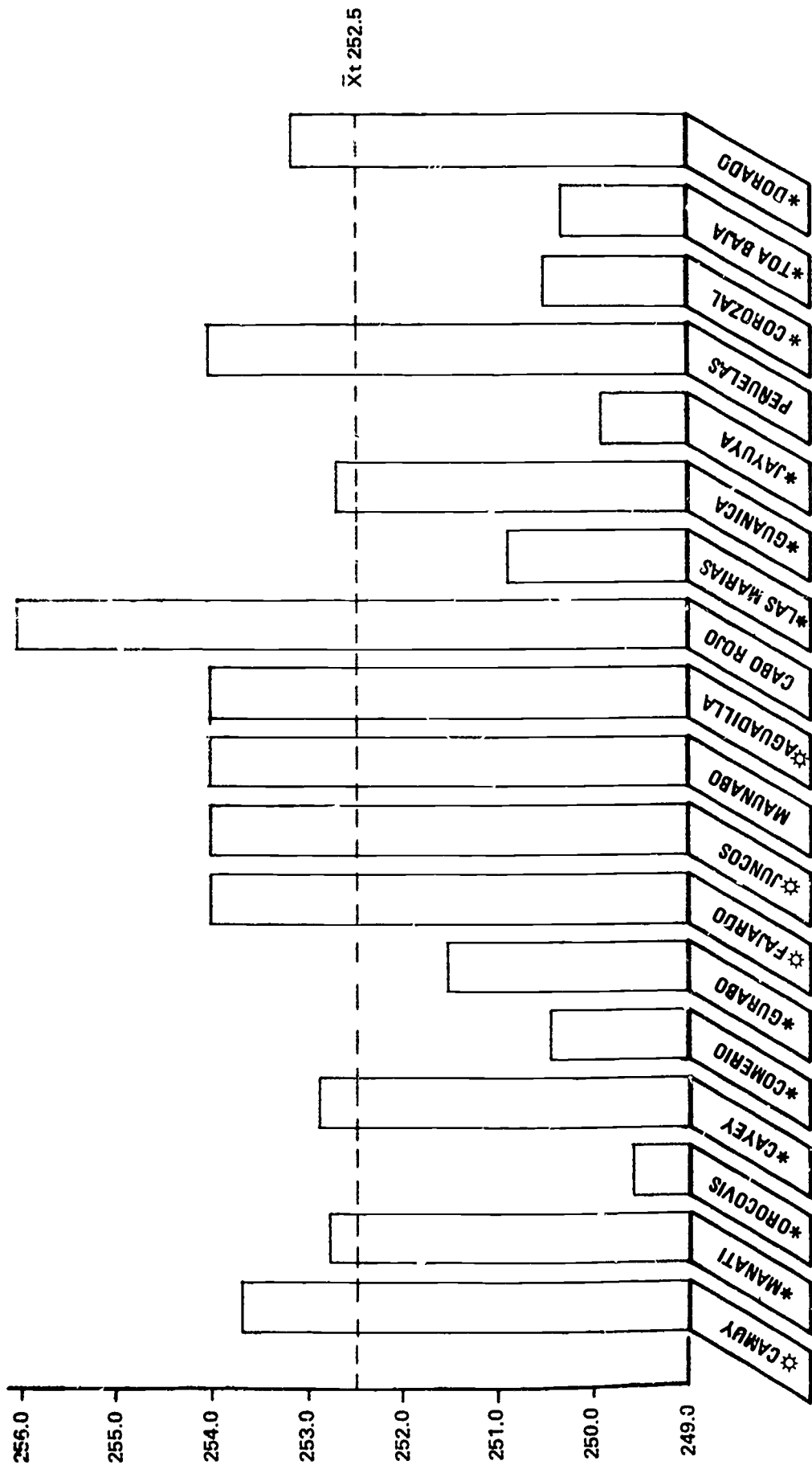
GRAPH 7-A  
 Spanish Reading Test - Eighth Grade  
 Mean Scores by District and Zone  
 April, 1972



GRAPH 7-B  
 Spanish Reading Test - Eighth Grade  
 Mean Scores by Regions and Zone  
 April, 1972

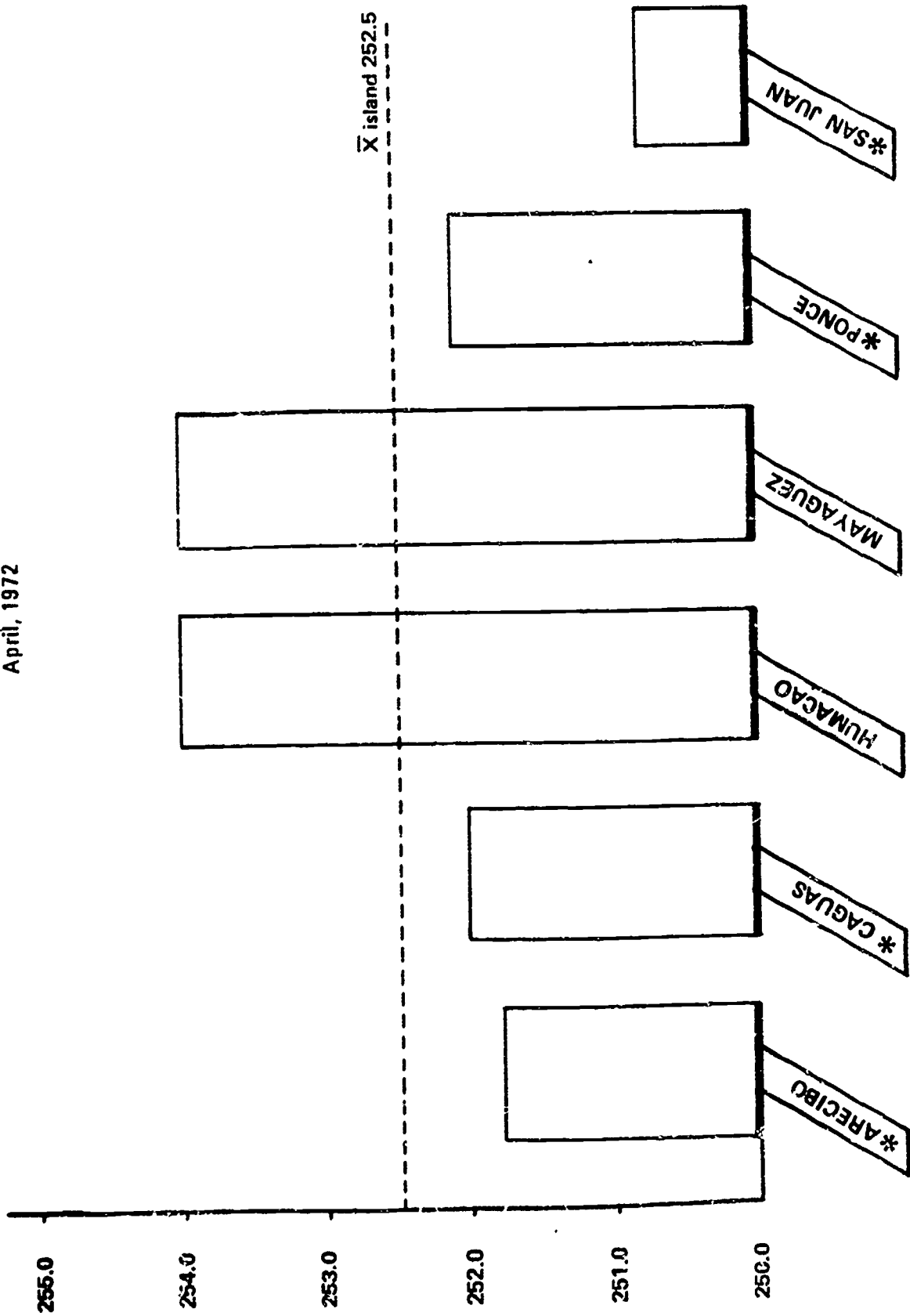


GRAPH 8-A  
 Spanish Reading Test - Tenth Grade  
 Mean Scores by District  
 April, 1972

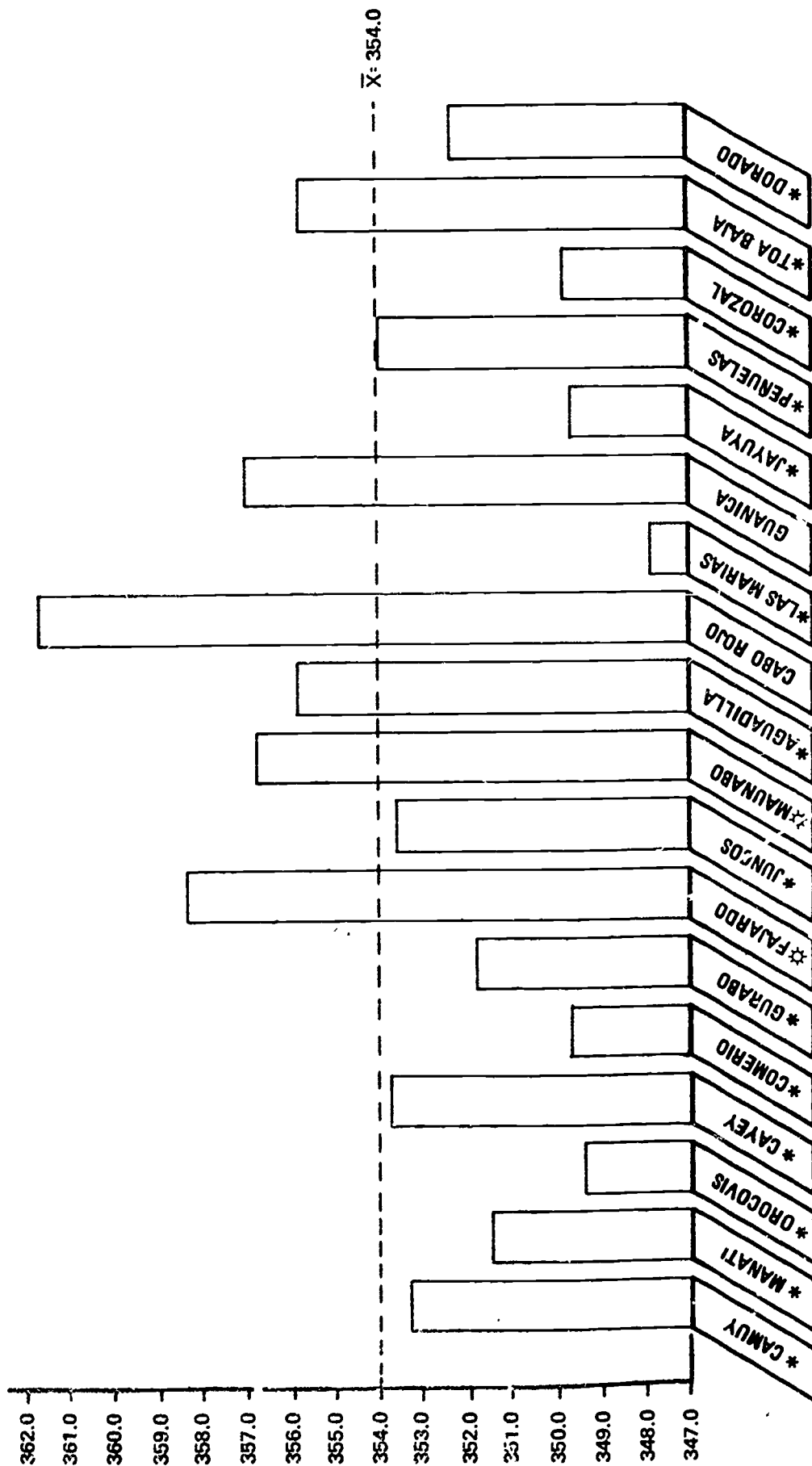




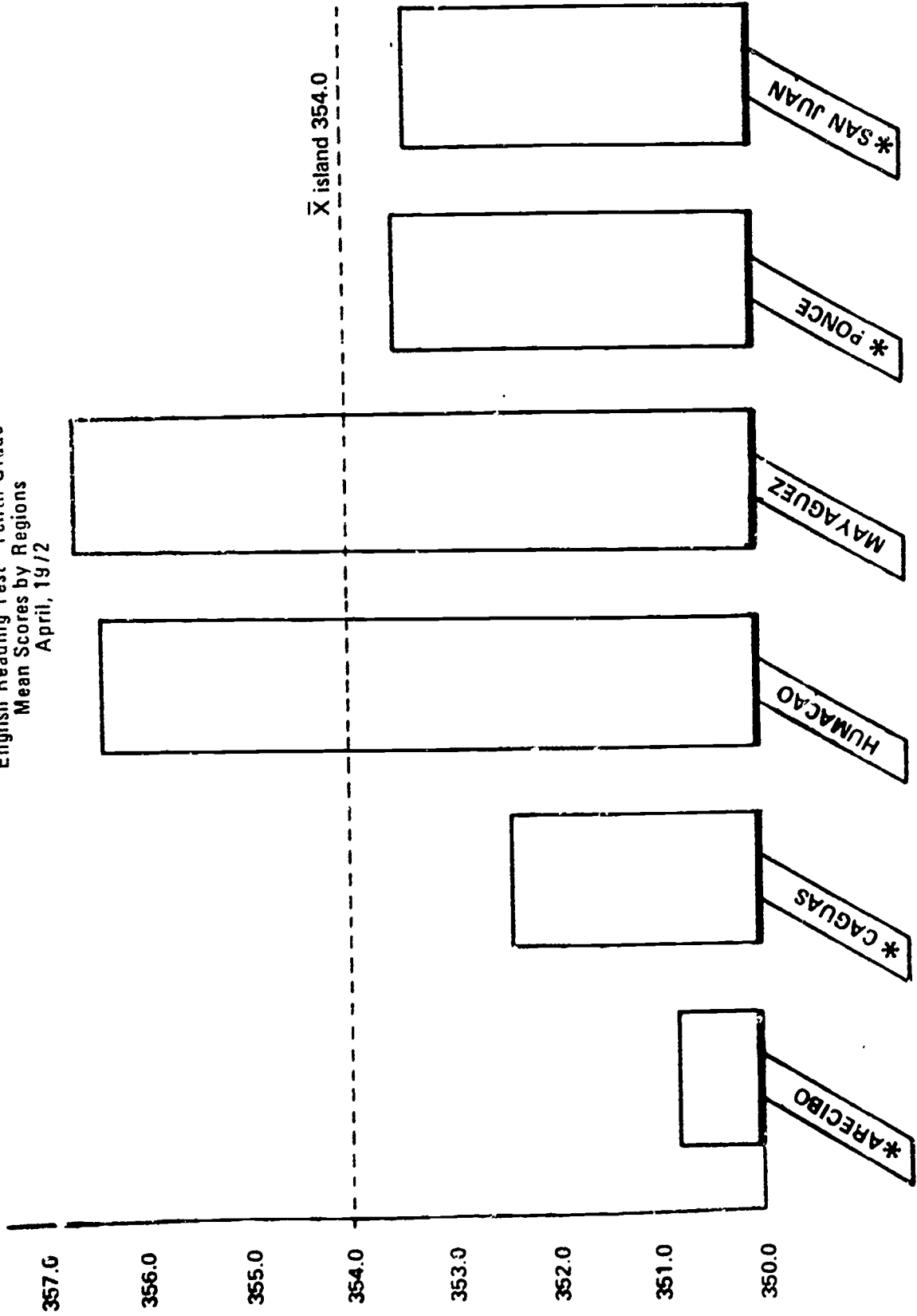
GRAPH 8-B  
 Spanish Reading Test - Tenth Grade  
 Mean Scores by Regions  
 April, 1972



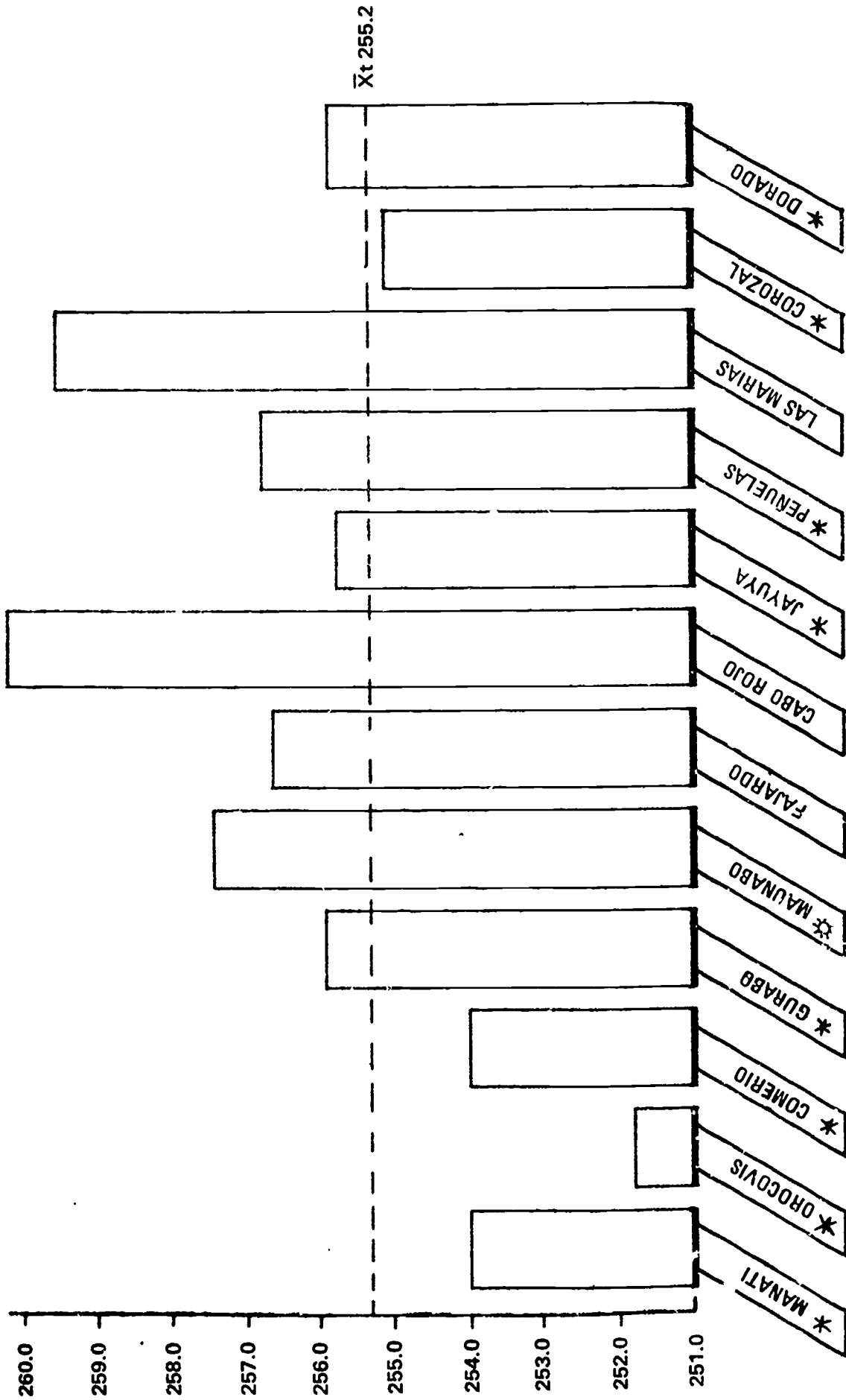
GRAPH G-A  
 English Reading Test - Tenth Grade  
 Mean Scores by District  
 April, 1972



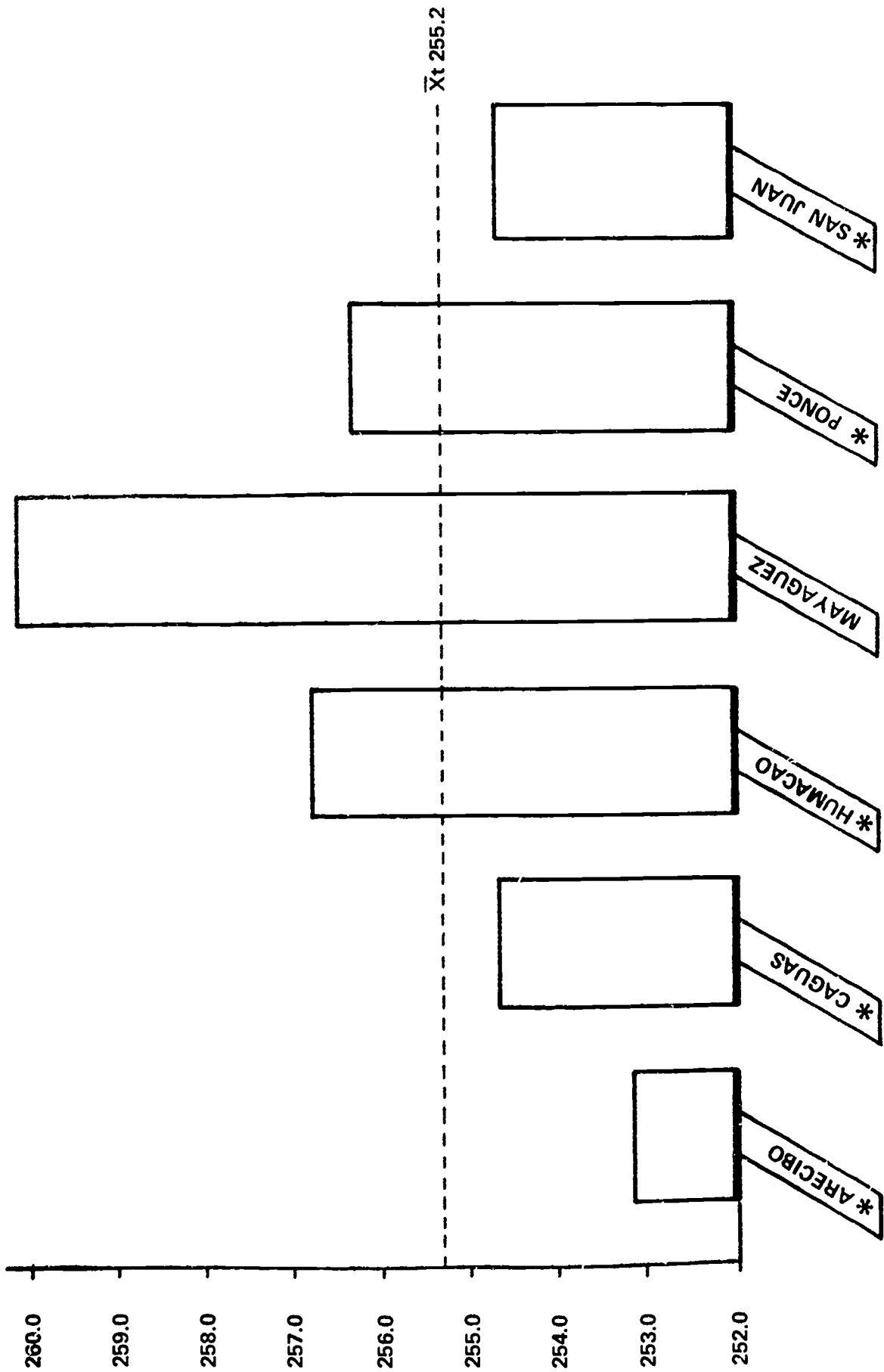
GRAPH 9-B  
 English Reading Test - Tenth Grade  
 Mean Scores by Regions  
 April, 1972



GRAPH 10-A  
 Spanish Reading Test - Elementary Grade  
 Mean Scores by District  
 April, 1972



GRAPH 10-B  
 Spanish Reading Test - Eleventh Grade  
 Mean Scores by Regions  
 April, 1972



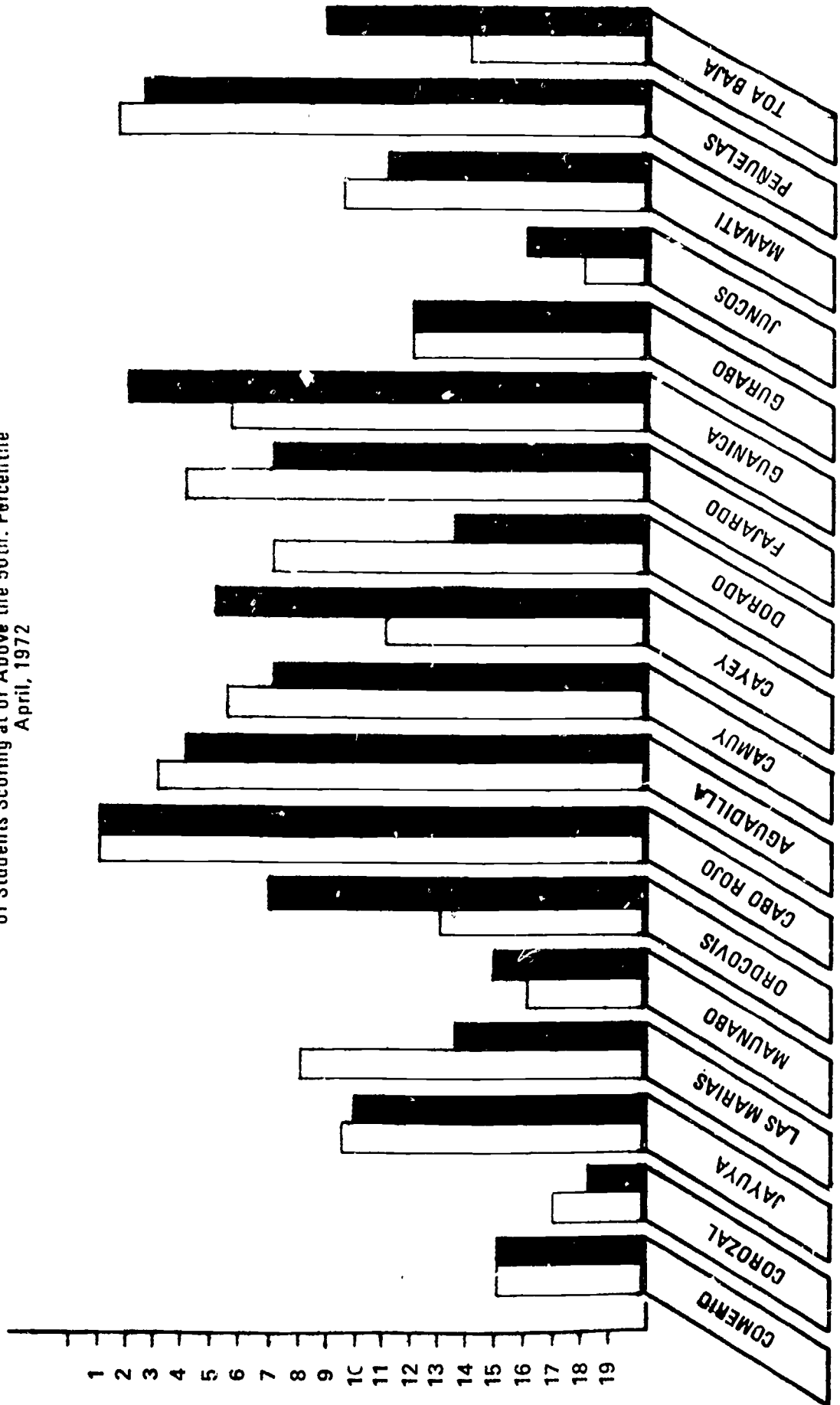
**GRAPH 11**  
**Spanish and English Reading Tests, DMA - Sixth Grade**  
**Relative Ranking of School Districts Based on Percentage**  
**of Students Scoring at or Above the 50th. Percentile.**  
**April, 1972**

□ SPANISH  
 ■ ENGLISH

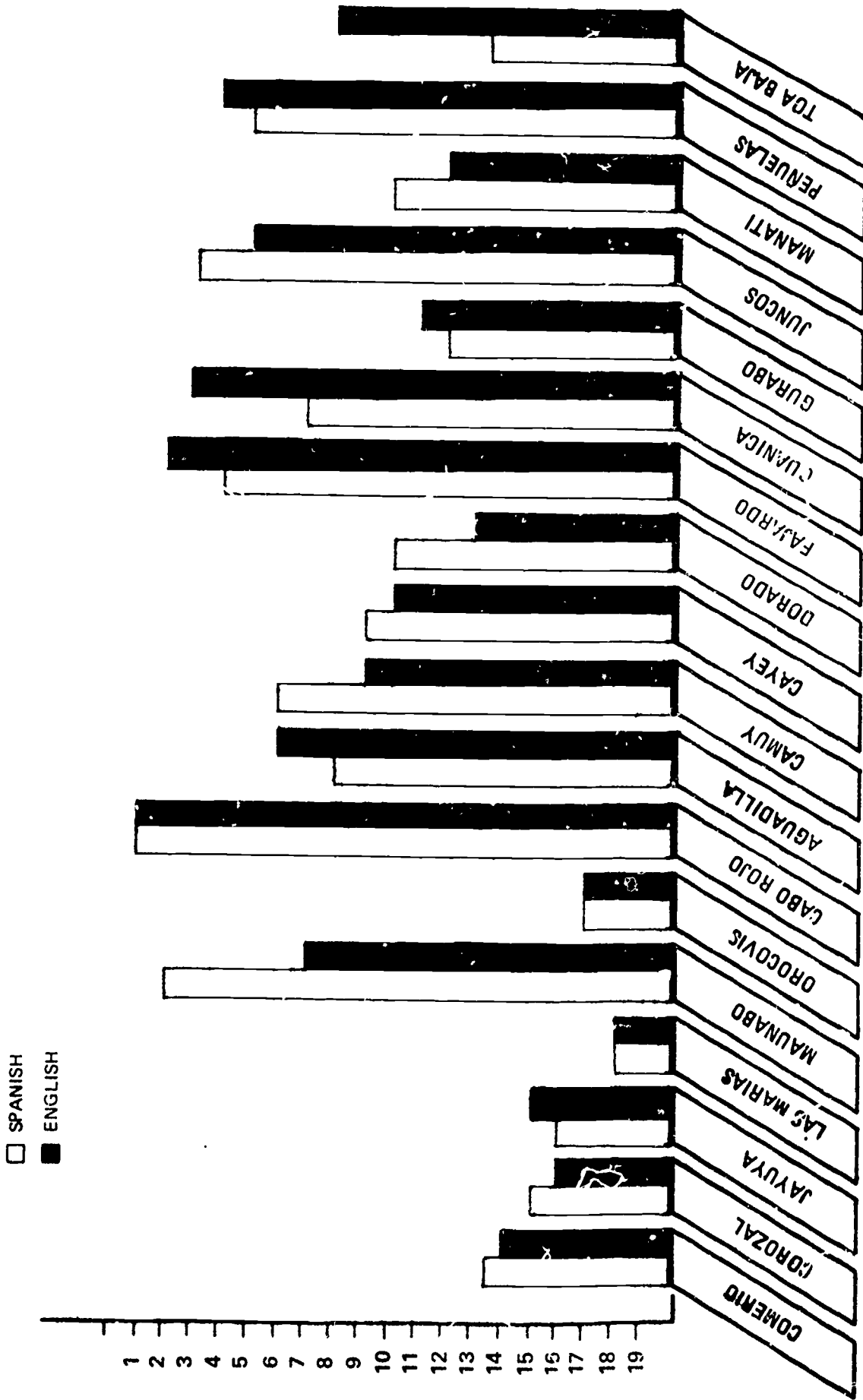


**GRAPH 12**  
**Spanish and English Reading Tests - Seventh Grade**  
**Relative Ranking of School Districts Based on Percentage**  
**of Students Scoring at or Above the 50th. Percentile**  
**April, 1972**

□ SPANISH  
 ■ ENGLISH



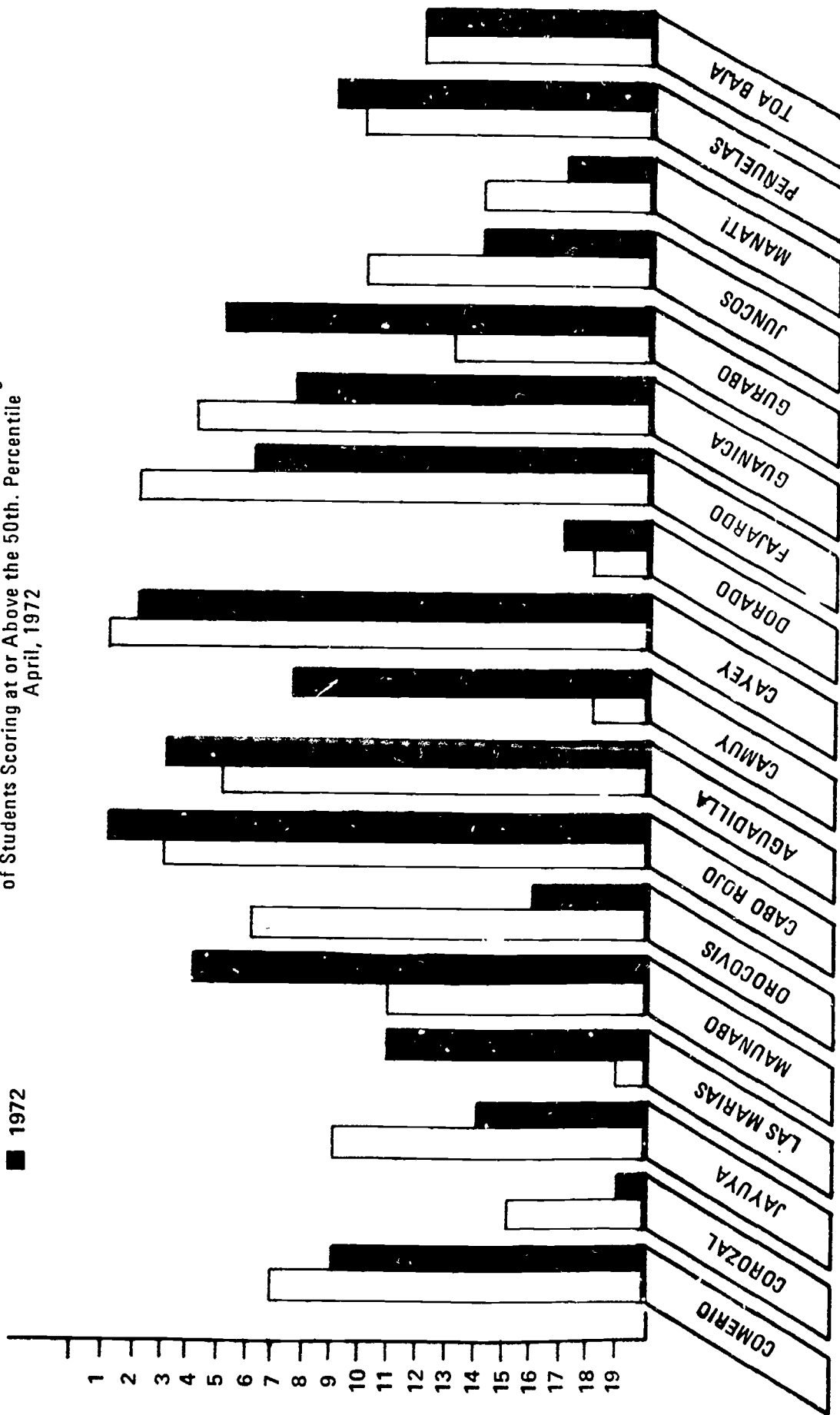
**GRAPH 13**  
**Spanish and English Reading Tests - Tenth Grade**  
**Relative Ranking of School Districts Based on Percentage**  
**of Students Scoring at or Above the 50th. Percentile**  
**April, 1972**





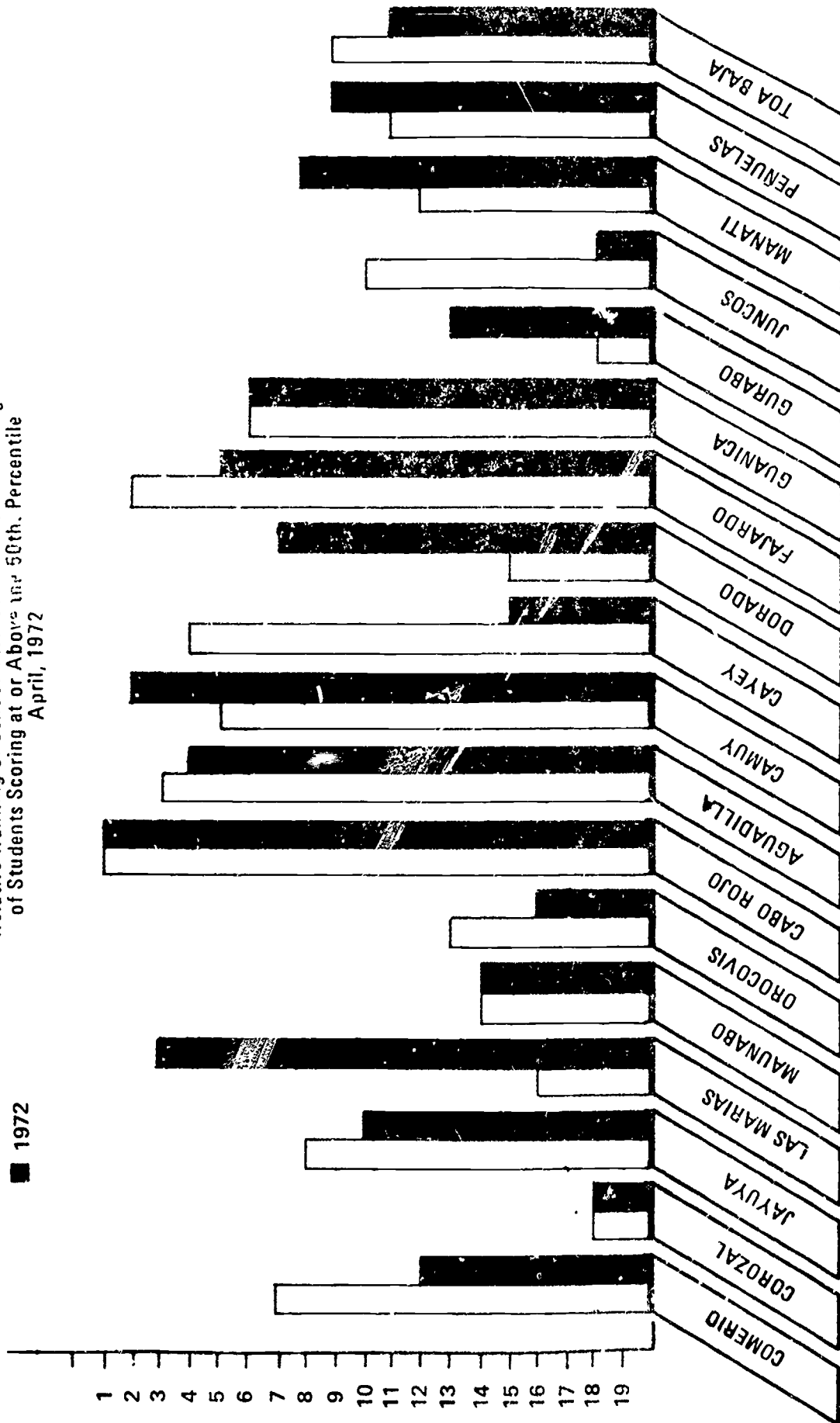
GRAPH 14  
 Comparison of Spanish Reading Test Scores  
 in the Years 1971 and 1972 - Fourth Grade  
 Relative Ranking of School Districts Based on Percentage  
 of Students Scoring at or Above the 50th. Percentile  
 April, 1972

□ 1971  
 ■ 1972

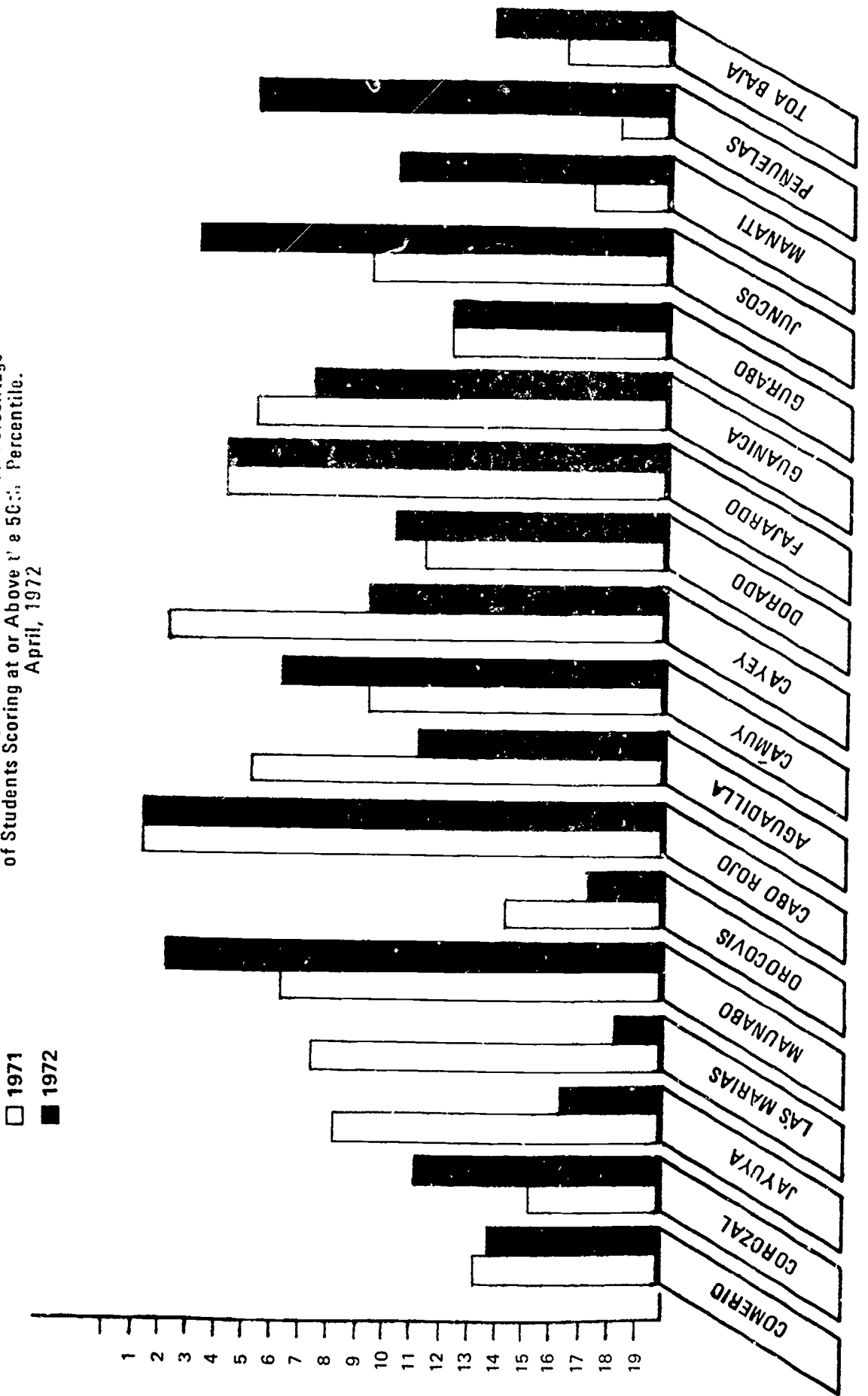


**GRAPH 15**  
**Comparison of Spanish Reading Test Scores**  
**in the Years 1971 and 1972 - Seventh Grade**  
**Relative Ranking of School Districts Based on Percentage**  
**of Students Scoring at or Above the 50th Percentile**  
**April, 1972**

□ 1971  
 ■ 1972



**GRAPH 16**  
**Comparison of Spanish Reading Test Scores**  
**in the Years 1971 and 1972 - Tenth Grade**  
**Relative Ranking of School Districts Based on Percentage**  
**of Students Scoring at or Above the 50th Percentile.**  
**April, 1972**



PLANS OF TWELFTH GRADE GRADUATES

PLAN OF TWELFTH GRADE GRADUATES

Based on the premise that the aspiration level of high school graduates is positively affected by increased educational opportunities, data on plans of twelfth grade graduates have been gathered in our school system during three consecutive years as part of the design to assess Title I impact in our educational system.

Out of the total of 26,169 potential twelfth grade graduates in the 53 school districts 18,880 filled in a questionnaire indicating their plans after graduation. (See Appendix 1). A breakdown of the data for the Title I sector, the Non-Title I sector and total Island, is presented on Tables 27, 28, 29, 30, 31 and 32.

The great majority (75.2 percent of the 18,880) expressed they had plans to continue studying or to work and continue studying.

While 1.1 percent indicated they had intentions of working, 1.9 percent indicated that they did not have plans either to work or study.

Only 413 or 2.2 percent had plans to enter the Armed Forces and 59 or 1.4 percent did not answer the item.

Comparing the Title I districts with the rest of the school districts, it was found that 50.4 percent of students from the Title I districts and 49.1 of the students from the other districts indicated they had plans to continue studying.

Table 27

PLANS OF POTENTIAL TWELFTH GRADE GRADUATES BY SEX: 35 TITLE I

DISTRICTS - VERSUS - 46 NON TITLE I DISTRICTS - YEAR 1971-72

DISTRICTS	SEX	P L A N S							Totals
		Study Only	Study and Work	Work Only	Neither Work or Study	Entered Armed Forces	Blank		
Title I	Male	1,206	622	779	75	97	30	2,809	
	Female	42.9 2,067	22.1 689	27.7 794	2.7 102	3.5 6	1.1 29	100	
	%	56.1	18.7	21.5	2.8	.2	.8	100.0	
Other 46 School Districts	M & F	3,273	1,311	1,573	177	103	59	6,496	
	%	50.4	20.2	24.2	2.7	1.6	.9	100.0	
Other 46 School Districts	Male	2,258	1,689	975	77	296	93	5,388	
	Female	41.9 3,848	31.3 1,820	18.1 1,054	1.4 151	5.5 16	1.7 107	100.0	
	%	55.0	26.0	15.1	2.2	.2	1.5	100.0	
Title I	M & F	6,166	3,509	2,029	228	312	200	12,364	
	%	49.3	28.3	16.4	1.8	2.5	1.6	100.0	
Title I	M & F	4,379	4,826	3,607	405	415	259	18,881	
	%	49.7	25.5	19.1	2.1	2.2	1.4	100.0	

findings: 1) Girls outnumbered boys in plans to continue studying.  
2) Boys outnumbered girls in plans to work only.

ALTERNATIVES IN ITEMS 1, 3 AND 4 OF THE QUESTIONNAIRE CHOSEN BY STUDENTS WHO INDICATED THEY HAD PLANS TO CONTINUE STUDYING

Item 2: Economic Needs

ALTERNATIVES	35 Title I Districts		Other 46 School Districts		Total Island	
	N	%	N	%	N	%
A- Do not need economic help	206	6.3	841	13.8	1,047	11.2
B- Need full scholarship	2,659	81.2	4,075	66.8	6,734	71.8
C- Need transportation	132	4.0	303	5.0	435	4.6
D- Need for living expenses	82	2.5	84	1.4	166	1.8
E- Need for books and materials	183	5.6	759	12.4	942	10.0
In blank	11	.3	44	.7	55	.6
Total	3,273	100.0	6,106	100.0	9,379	100.0

Item 3: Type of Institution

ALTERNATIVES	35 Title I Districts		Other 46 School Districts		Total Island	
	N	%	N	%	N	%
A- In University or College	2,741	83.7	4,629	75.8	7,370	78.6
B- In Commercial School	66	2.0	201	3.3	267	2.8
C- In Vocational School	295	9.0	743	12.2	1,038	11.1
D- In Technological School	104	3.2	326	5.3	430	4.6
E- Different plans	58	1.8	183	3.0	241	2.6
In blank	9	0.3	24	0.4	33	0.3
Total	3,273	100.0	6,106	100.0	9,379	100.0

Findings (Table 28)

- 1) A higher percentage of students from the non-Title I districts who indicated plans to continue studying indicated they were in no need of economic help, however in both groups the majority expressed they are in need of a full scholarship.
- 2) A higher percentage from the Title I districts have plans to continue studying in a University or College.
- 3) Approximately 79% of all twelfth grade graduates expressed their preference for a university or college while 15.7% of all students in the Island indicated they had plans to continue studying in either vocational or technological schools.

Item 1: Length of Expected Vocational Training

ALTERNATIVES	35 Title I Districts		Other 46 School Districts		Total Island	
	N	%	N	%	N	%
A- More than four years	74	5.6	381	10.9	455	9.4
B- 2-3 years	267	20.4	656	18.7	923	19.1
C- 1-2 or three years	664	50.6	1,563	44.5	2,227	46.2
D- A year	264	20.1	734	20.9	998	20.7
E- Less than a year	37	2.8	145	4.1	182	3.8
In blank	5	0.4	30	0.9	35	0.7
Total	1,311	100.0	3,509	100.0	4,820	100.0

Item 2: Study Time Plans of Those Who Expect to Study and Work

ALTERNATIVES	35 Title I Districts		Other 46 School Districts		Total Island	
	N	%	N	%	N	%
A- Study during day and work night	115	8.8	298	8.5	413	8.6
B- Study during day and work free days	476	36.3	792	22.6	1,268	26.3
C- Study half a day and work the other half	441	33.6	1,401	39.9	1,842	38.2
D- Study night courses and work during day	200	15.3	845	24.1	1,045	21.7
E- Study by correspondence and work during day	18	1.4	31	0.9	49	1.0
In blank	61	4.7	142	4.0	203	4.2
Total	1,311	100.0	3,509	100.0	4,820	100.0



TABLE 29  
 STUDENTS WHO INDICATED PLANS TO CONTINUE STUDYING AND TO WORK

	35 Title I Districts		Other 46 School Districts		Total Island	
	N	%	N	%	N	%
1- Study for more than one year	719	22.0	1,693	27.7	2,412	25.7
2- Study one year	1,392	42.5	2,076	34.0	3,468	37.0
3- Study less than one year	900	29.5	1,737	28.4	2,703	28.8
Do not study	105	5.0	481	7.9	646	6.9
Do not know	15	0.5	70	1.1	85	0.9
Total	3,273	100.0	6,106	100.0	9,379	100.0

TABLE 29

TABLE 30  
 INSTITUTIONS CHOSEN BY THOSE STUDENTS WHO INDICATED THEY HAD PLANS TO CONTINUE STUDYING AND TO WORK

TABLE 30  
 INSTITUTIONS CHOSEN BY THOSE STUDENTS WHO INDICATED THEY HAD PLANS TO CONTINUE STUDYING AND TO WORK

INSTITUTIONS	35 Title I Districts		Other 46 School Districts		Total Island	
	N	%	N	%	N	%
A- in a University or College	599	45.7	1,424	40.6	2,023	42.0
B- in a Commercial School	103	7.9	397	11.3	500	10.4
C- in a Vocational School	380	29.0	928	26.4	1,308	27.1
D- in a Technological Institute	89	6.8	383	10.9	472	9.8
E- Different plans from the above	136	10.4	349	9.9	485	10.1
Total	4	0.3	28	0.8	32	0.7
Total	1,311	100.0	3,509	100.0	4,820	100.0

TABLE 30

Of the students who indicated plans to study and work indicated they were planning to study either in a vocational school or technological institute. Almost all of them indicated they would study two to three years.



POTENTIAL TWELFTH GRADE GRADUATES CHOSEN BY THOSE STUDENTS WHO INDICATED  
 NO PLAN FOR WORKING ONLY OR THAT THEY DID NOT HAVE PLANS  
 FOR WORKING OR STUDYING

Item 6 - Reasons Reported By Those Planning Not To Continue Studying

ALTERNATIVES	35 Title I Districts		Other 46 School Districts		Total	Island
	N	%	N	%	N	%
A- No interest in studying	119	6.8	211	9.3	330	8.2
B- Need of scholarship	270	15.4	308	13.6	578	14.4
C- Family needs economic help	919	52.5	1,177	52.1	2,096	52.3
D- Low grades	378	21.6	448	19.8	826	20.6
E- Poor health	20	1.1	34	1.5	54	1.3
In blank	44	2.5	79	3.5	123	3.1
Total	1,750	100.0	2,257	100.0	4,007	100.0

Table 31

POTENTIAL TWELFTH GRADE GRADUATES WHO INDICATED THEIR  
 PLANS TO ENTER THE ARMED FORCES - 1971- 72 (ITEM I,E)

School Districts	N	%
35 Title I	103	24.8
Other 46	312	75.2
Total Island	415	100.00

Table 32

PLANS OF POTENTIAL TWELFTH GRADE GRADUATES, 35 TITLE I DISTRICTS VS 46 NON TITLE I DISTRICTS  
YEARS 1970-1971 and 1971-1972

DISTRICTS	N	P L A N S													
		Study Only		Study and Work		Work Only		Neither Work or Study		Entered Armed Forces		Blank		Totals	
		1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972
TITLE I DISTRICTS	N	2,576	3,273	1,212	1,311	1,548	1,573	193	177	81	103	68	59	5,678	6,496
		45	50.4	22	20.2	28	24.2	3	2.7	1	1.6	1	.9	100	100
NON-TITLE I DISTRICTS	N	6,481	6,106	4,284	3,509	2,775	2,029	252	228	221	312	274	200	14,287	12,384
		45	49.3	30	28.3	19	16.4	2	1.8	2	2.5	2	1.6	100	100
TOTALS	N	9,057	9,379	5,496	4,820	4,323	3,602	445	405	302	415	342	259	19,965	18,880
		90.3	98.7	45.5	45.5	41.1	39.1	2.2	2.1	1.5	2.1	1.8	1.4	100	100

There was an increase of 3.5% of students from the Title I sector including those able to continue studying. 6.5% in 1971 vs 30.4% in 1972. In the remaining non-title I district a 4.3% increase was observed.

PROJECT PROFILES

Several activities were designed to provide compensatory education experiences to Title I children who were receiving less than six hours of instruction daily. In some instances no schooling at all due to some or all of the following reasons:

In some areas children were getting 3 or 4 hours of instruction daily due to both lack of school rooms and teacher shortage. In others, children were on an interlocking organization of 5 hours daily due to lack of space. Certain areas had facilities for a limited number of grades only, and beyond a certain grade students had to attend schools located in distant neighborhoods and they needed transportation services. Many school attendance areas lacked the facilities to admit to the first grade all of their school age children. This situation left out of school many school age children who had to wait several years to start their schooling. Furthermore, students also lacked enough schooling time due to cases of prolonged teachers' absences without the provision of substitute teachers.

The activities hereinafter described were designed to provide adequate schooling facilities, enough teachers and substitute teachers and supportive services to offer the participating needy youngster a school day of six hours daily of instruction.

## PROJECT PROFILE

- I. Project Area : 10
- II. Project Title : Lengthening the School Day
- III. Grade Level : Grades from 1 to 12
- IV. Cost : \$8,855,948.00
- V. Year : 1971-72
- VI. Duration : This project is a continuation of a project operating in Puerto Rico since 1966

### Objectives:

1. To eliminate the double enrollment and interlocking type of school organization.
2. To increase the number of classrooms and other school facilities.
3. To increase school retention.

### Activities and services provided:

#### A. Construction program:

Up to fiscal year 1972 a total of 2,391 classrooms and 1,064 other school facilities had been constructed with Title I funds in Puerto Rico. Specifically, for school year 1971-72 a total of 175 classrooms and 66 other school facilities were under construction. The 66 school facilities included: 6 libraries, 17 lunchrooms, 9 offices, 22 sanitary units, 6 fences and 6 athletic courts. The construction program for the years 1970-71 and 1971-72 included 56 school districts, 32 of which are Title I. Of a total of 415 classrooms constructed during these two years, 79 were used to eliminate double enrollment, 184 to attend increase in enrollment, 100 to substitute buildings in poor conditions, 52 to eliminate interlocking organizations. In addition to these, 144 other school facilities were also completed. A total of 17,391 students had benefited during the two years.

B. Appointment of additional teachers:

A total of 754 teachers appointed last year to reduce or eliminate the double enrollment and interlocking type of organization in Title I districts continued this year. Three hundred three (303) positions were added for the same purpose for a total of 1057. Approximately 90,430 students or 40% of the total enrollment of the 35 Title I districts were affected in one way or another as a result of the appointment of the 1,057 teachers. Sixty eight per cent (68%) of the teaching positions appointed to lengthen the school day served that purpose, 14 per cent were used to attend increase in enrollment, 12 per cent to reduce the number of students per group and 6 per cent were used for other purposes.

C. Transportation Program:

Of a total enrollment of 353,820 students in 48 school districts (including the 35 Title I) 18,602 or 5 per cent were offered transportation services. Of this total, 14,997 belonged to Title I districts. That is 6 per cent of the total enrollment in these districts.

D. Appointment of substitute teachers:

Fifty two teachers were appointed this year in the 35 Title I districts to substitute teachers who were in leave of absence for maternity and or prolonged sickness. Approximately 4,619 students benefited from the program in both levels, elementary and secondary; 3,078 rural zone and 1,541 urban zone.

Other activities aimed at the improvement of the academic achievement and the cultural enrichment of Title I target youngsters from prekindergarten through grade 12 including the handicapped.

Curriculum development and teacher training activities were undertaken to offer compensatory education experiences with emphasis on the reading skills in both English and Spanish, Mathematics, Science and Social Studies. Cultural enrichment activities in art, drama and music were also offered. Vocational education and academic courses were offered to out-of-school youths.



PROJECT PROFILE

I. Project Area No. : 20

II. Project Title : Curriculum Enrichment and Improvement  
of Pupils' Academic Achievement

III. Grade Level : All levels

IV. Cost : \$18,969,379.00

V. Year : 1971-72

VI. Duration : This project is a continuation of a  
project operating in Puerto Rico  
since 1969

Objectives:

1. To improve pupils' academic achievement in the following areas:

Spanish  
English  
Science  
Mathematics  
Social Studies  
Vocational Program

2. To enrich and expand curriculum in all instructional areas.
3. To facilitate and make more effective the transfer of students from secondary to college level and to offer students an opportunity to move ahead at their own pace.
4. To offer unemployed young dropouts between the ages of 16 to 21 from areas of high cultural deprivations, experiences for the intellectual, vocational and social development which will enable them either to find employment or continue further studies.
5. To provide opportunity for students with artistic talent to develop their potential to a maximum and to share their artistic knowledge and experience with others.
6. To improve teachers' preparation.
7. To improve and extend school library services.
8. To continue developing in teachers and students the competencies needed for the practical use of resources available in educational technology.

## Activities:

### A. Curriculum Development and Enrichment

1. New curriculum continued to be designed and the existent one continued to be revised.

Specifically, the following was accomplished during fiscal year 1972:

- a) the curriculum designed to meet the educational needs in science of students in 4th, 5th and 6th grades was implemented in the 35 Title I districts. A total of 14,280 students benefited. Audiovisual aids, which included pictures, puzzles, filmstrips, posters and charts, were either commercially purchased or produced by curriculum technicians or teachers.
- b) the Social Studies program was reorganized so as to provide the students with laboratory periods using a variety of textbooks (averaging 4 instead of only one within a class period).
- c) classes in English, Spanish and Mathematics at the university level, were offered in the 33 high schools participating in the project, by teachers with previous training in the subject in accordance with contents, methods and evaluation system.
- d) wage earning home economics courses were established in 4 academic senior high schools. A total of 216 students benefited from the program.
- e) under the Business Education Program major emphasis was given to strengthening existing courses in office occupations. The office practice course was enriched with simulated office experiences. Ten teaching positions were assigned.
- f) the Distribution and Marketing Program provided training in modern selling techniques in retail trades to a total of 105 students in the school districts of Morovis, Isabela and Mayaguez.
- g) courses in Industrial Arts were offered to 259 students in four senior high schools in the areas of basic electronics, graphic communication, technical drawing and power mechanics.
- h) forty six academic senior high schools were served with trade courses. A total of 104 vocational courses were organized. The enrollment in these courses included 6,250 students, 5,000 of which were high school students and 1,250 dropouts.

- i) in the seven vocational programs, instructional materials were made available to the participating districts. Outlines of courses, materials with information about the curriculum, bibliographies, teaching aids and monographs with occupational information, were developed. The Vocational Industrial Education Program concentrated its efforts in the preparation and revision of teacher guides and learning modules for power sewing machine operator, outbody repairing and painting, electrical appliances repairing, electricity, refrigeration, plumbing, cosmetology, carpentry, bricklaying and automobile mechanics.

On the area of Business Occupation, materials on office techniques were revised.

The distribution and marketing program produced materials with regard to personal relations, importance of distribution in the economy, life insurance, human relations in business, salesman personality and his social adaptation.

The Vocational Agriculture Program prepared curriculum guides for the teaching of units related to crops production, animal production, agricultural mechanics, food preservation, flower gardening and ornamental horticulture.

The Industrial Arts program continued the revision of high school courses on wood and metal manufacturing, basic electricity and visual communications.

The guidance program kept updating information on new and emerging occupations, besides monographs with occupational information for disadvantaged students.

Curriculum guides were completed for a special course dealing with home economics for the world of work.

- j. A total of 335 secondary schools used the San Juan Star in the classroom and approximately 32,000 newspapers were distributed to the participating schools.
- k. A three week seminar for forty talented ninth grade students from rural second unit schools in economically deprived areas, was held at the Inter-American University at San Germán where they offered conferences, field trips, laboratory experiments, films and library studies on interesting and contemporary scientific aspects.

- l. Twenty five students served as guides in the Museum of Art in Ponce, while other 25 entered the School of Visual Arts. Guides served during their free periods and weekends and received monthly payments from \$25 to \$75 according to the number of hours worked. Subjects taught either in the Visual Arts School or in the Museum were sculpture, painting, cerography, drawing, engraving, Renaissance Arts, the place of the fine arts in the economic and social development of the country and art appreciation in general. Twenty five students participated in the annual Fine Arts Festival and won the first and second prize in drawing, first prize in caricature and second prize in collage.
- m. The curriculum for the teaching of music was enriched through classes of musical history, musical appreciation, instrumentation and organization of bands, choral groups and rondallas.
- n. A special curriculum for the Work-Study Center youths was designed.
- o. Diagnostic tests as well as standardized achievement tests were constructed in Spanish, English, Mathematics, Science, and Social Studies.
- p. A total of 997 students from 33 high schools of the Island, 11 of which are in Title I, were enrolled in the Advanced Placement Program. 522 students took the College Board Examination to receive credit for the classes taken. (Spanish, English and Mathematics).

B. Pre and in-service training activities were provided through which:

- a) teachers attending the 119 participating groups in the Science program as well as 6 general supervisors and 35 coordinators were trained or oriented in the implementation of the new curriculum since many of them were new in the program this year.
- b) three hundred social studies teachers were trained in the development of skills such as stating instructional objectives in behavioral terms, asking questions that demand more than mere memorization, development of reflective thinking including interpretation, organization, analysis, discussing alternatives, etc.
- c) The Director of the Social Studies Program, the General Supervisors and the Coordinators offered about 282 training sessions (both group and individual) to approximately 3,000 participants.

- d) A total of 12 sessions were held with supervisors and coordinators from the Spanish program to offer them orientation in areas such as: child psychology, production and use of teaching aides, reading methods and techniques, individualized instruction and evaluation.
- e) Out of a total of 2,000 applicants, 466 high school graduates who had a satisfactory command of English and were interested in teaching as a profession, were selected as trainees for the bilingual program in 1971-72. Criteria for the selection of candidates were clearly stated and defined.

Pre-service training centers were established at various institutions of higher learning throughout the Island. The training sessions lasted approximately 8 weeks and accounted for a total of 9 college credits. The purpose of the training program were to familiarize the candidate with:

- a) Techniques recommended for teaching English as a second language.
- b) Materials used in the primary grades.
- c) Psychology of early childhood.

The 466 candidates completed the training successfully and were appointed as provisional teachers of English. They were assigned to teach English in the primary grades in 690 schools in the six educational regions, 254 in the urban zone and 436 in the rural zone.

Bilingual teachers participated in various in-service training activities such as meetings, seminars, workshops and demonstration classes given by the local supervisors in the school districts. The type and number of in-service training activities varied from one district to the other depending on total number of teachers assigned to local supervisors.

Arrangements were made for the teachers to take special courses during Saturdays and succeeding summer sessions in order to complete the requirements for a certificate as "Teacher of English in the Elementary School". Forty teachers expect to finish their degree during 1972-73.

- f) A 3 credit course in Linguistic in the Teaching of Reading (Education 385) was offered in 5 universities to a total of 130 junior high school teachers. The course content included the following aspects:
  - a) Principles underlying the development and teaching of an effective skill building program.

- b) Selection and availability of literature for teenagers.
- c) Use of electronic equipment and materials.
- d) Individualized instruction.

Approximately 100 zone supervisors of English attended a 5 day seminar organized by general supervisors and the English staff at the Central office. Reading experts were invited to lecture on objectives, techniques and materials to be used in the project. The teachers participated in various inservice training activities such as meetings, seminars, workshops and demonstrations classes given by the local supervisors in the school districts. The type and number of inservice training activities varied from one district to the other depending on the number of teachers assigned to local supervisors.

- g) Workshops, seminars and conferences on topics such as individualized instruction, teaching techniques, use of the skill tapes, use of audiovisual materials, evaluation in mathematics, modern mathematics, programmed instruction and use of text books were offered at the local, regional and central office levels for mathematics teachers. About 150 teachers had the opportunity to take university courses in mathematics:

Education 303 - 19 teachers  
 Mathematics 300 - 76 teachers  
 Mathematics 151 - 55 teachers

- h) Summer seminars were offered to participating teachers by the Advanced Placement Program during summer sessions by University professors under the direction of College Board officials.
- i) In-service training for vocational education teachers and curriculum technicians was intensified in the seven vocational programs:
  - Guidance and Counseling, Business Education, Distribution and Marketing, Industrial Arts, Business Occupation, Vocational Agricultural.
- j) In-service training was offered to 13 librarians in book-binding, reading techniques, use of audio-visual aids.
- k) Three hundred secondary school teachers were offered in-service training in the use of the newspaper as an educational device. These included the use of various sections of the newspaper, current events, newspaper terminology, skimming, editorials, etc.

- 1) In-service training and university courses such as; Repertorio Coral, Organization of Choral Groups, Orff Mehtod, etc. were offered to 38 teachers of music in the secondary schools. Workshops dealing with areas related to sculpture, photography, use of new techniques in plastic arts were offered to 20 teachers of visual arts.
- m) A total of 747 teachers attended in-service training activities organized by audiovisual coordinators on use of educational technology, manipulation and maintenance of equipment, designing, production and use of audiovisual materials, etc.
- n) In-service training activities for kindergarten teachers include seminars, conferences demonstrative classes and workshops on specific teaching techniques for this level. Scholarships were provided to 18 teachers to pursue further university courses on preschool education.

C. Books, newspapers, equipment and materials were purchased and used accordingly for the following purposes:

- a) To improve and reinforce reading skills in the junior high school level the following books were purchased:
  - 1) 136,172 English reading skill building text books.
  - 2) 5,355 library books for reading corners.
  - 3) Electronic equipment and materials for 85 participating schools in the English program.
  - 4) Each school was provided with a tape recorder, table, chairs, 8 headphones, lighting center, 13 story books and metal cabinet.
- b) Mathematics teachers were provided with overhead console, tape recorder and cassettes, sets of slides following units of study, files and pegboard screens.
- c) Reference books for the high school libraries were provided and \$20 examination fee was paid to the students who participated in the Advanced Placement Program and took the College Board examinations.
- d) Twenty one audiovisual centers were organized in target areas which included establishment of 6 regional film libraries to provide circulation of 16 millimeter motion pictures to use in the classrooms.

e) Each audiovisual specialist received \$3000 in order to evaluate, select and purchase commercially prepared audiovisual material.

f) Equipment and material purchased by the Department of Education for the audiovisual program included:

1084	--	motion pictures
1181	--	film strips
147658	--	slides and transparencies
1462	--	other audiovisual materials

g) Instructional materials and equipment were provided to Kindergarten teachers which allowed for the creation of an adequate classroom atmosphere.



The supportive and ancillary services hereafter described were provided to help the target youngsters overcome difficulties that were hindering their academic gain and their emotional and social growth.

Instruction in health problems and drug abuse was offered. Health services were provided and activities aimed at reducing the drop out rate were conducted.

## PROJECT PROFILE

I. Project Area	:	30
II. Project Title	:	Supportive Services
III. Grade Level	:	All levels
IV. Cost	:	\$2,501,373.00
V. Year	:	1971-72
VI. Duration	:	This project is a continuation of a project operating in Puerto Rico since 1969

### Objectives:

1. To improve pupils' physical, social and emotional development.
2. To retain in school at least 50% of students identified as potential dropouts.
3. To offer students the opportunity to develop and cultivate their potentialities and aesthetic interests in the arts of painting, music and drama.
4. To foster and increase participation of parents and other community members in school affairs.
5. To improve guidance services to students through the use of diversified media in the identification of students' interests and needs.

### Activities and services provided:

#### A. Health Services

Physical examinations were made to a total of 38,403 (74.6%) kindergarten, first and seventh grade students of 36 districts, 35 of which are Title I. Specialists such as ophthalmologists, dermatologists, cardiologists, orthopedists, etc. tended a total of 5,034 students in 26 districts. A total of 25,163 students in 28 Title I districts received dental services which included extractions, treatment for dental cavities and surgery. A total of 959 students received hospital services at a cost of \$122,315.56.

### B. Social Work Services

A total of 37 positions of social worker were assigned to work in rural and urban areas in 29 Title I districts. Of a total of 47,528 students of all levels who benefited in one way or another from the services provided by the social worker in the 29 districts, 2,751 received individual help and 2,718 participated in group sessions. A total of 2,644 students were identified as potential dropouts by means of a predictive scale and teachers observations.

In-service training activities were provided by means of which social workers were trained in several aspects such as drug addiction and group therapy. Improvement of school environment, health and economic problems of students, social and civic activities and preparation of bulletins were some of the activities developed as part of the seminars (seminario de vida estudiantil) organized in various districts.

### C. Guidance Services:

The Guidance and Counselling Program utilized the service of 11 counsellors that served a total of 5,845 high school students from 8 school districts in addition to the existing 402 positions in the regular program.

### D. Fine Arts and Recreational Cultural Activities:

Formal music classes were continued with the following groups: Orquesta Juvenil de Cuerdas de Río Piedras, Rondalla de Yauco, Rondalla de Sabana Grande, Conjunto de Acordeones de Luquillo, Conjunto de Flautas de Salinas, Piano Lessons of Cidra, Conjunto de Cuerdas de Juana Díaz, Hatillo Band, Barceloneta Band and Piano Lessons of Viques. A total of 652 students participated in the program.

Seventeen teachers of drama and 3 supervisors were appointed this year to work in 17 Title I districts. A total of 925 students participated in the dramatic arts classes, 1,587 in the production of theatrical performances organized locally, 1,098 in special programs to celebrate school holidays, 290 in the Fine Arts Festival and 130 in Choral Recitation.

A total of 42 activities dealing with various phases of Puerto Rico and Universal Culture were offered around the Island, 9,046 students benefited from them. The activities consisted of lectures, poetry recitals, concerts, presentations of choral groups and theatrical performances.

The "Areyto Ballet Folklórico Puertorriqueño" offered 20 performances in Title I districts. A total of 18,000 students attended these performance free of charge.

Workshops on the use of the puppet as a teaching device were offered to 110 elementary school teachers specially from the rural zone in 21 Title I districts. A total of 11,898 students from the target areas attended the 109 puppet performances offered.

continued with the Teachers' Dramatic Company presenting dramatic performances. Two plays, El Premio del Pueblo and Fuerte Ovejuna were presented this year. Two hundred ninety-two performances were presented in schools at approximately 67,658 persons observed them among which were students, teachers, parents and other community members.

A series of 4 concerts by the Symphonic Orchestra of Puerto Rico, 6 by professors of the Puerto Rican Conservatory of Music and 40 by famous local players and singers were offered to students of low socio-economic level. A total of 6,803 students benefited from both urban and rural zones.

Two groups of 25 students were organized in the Mayaguez and Ponce Regions, to which 23 classes in the plastic arts were offered on Saturdays. Activities offered consisted of the study of plastic arts, analysis of pictures, filmstrips, sculptures, and masterpieces.

The Mobile Art Exposition with 29 masterpieces visited 31 of the 35 Title I school districts and other low socio-economic areas. Approximately 33,396 students visited it. Printed materials with pictures and biographical notes about the artists were distributed among visitors.

SUMMARY OF MAJOR FINDINGS

## Summary of Major Findings:

### A. Background:

Over the years of Title I funds in our educational system, the Division of Evaluation has faced serious limitations while trying to comply with the Title I evaluation requirement. One major constraint has been the lack of initial data base against which to compare annual results.

The need to develop standardized tests, being as it is a very slow process, plus the unsuccessful attempts to develop an effective data processing capability at the State Department of Education along with changes in the Title I program itself, have contributed to conceal very significant efforts expended toward a more comprehensive and objective assessment of the Title I program impact in the educational system.

The following is a summary of the major findings for this fiscal year including both objective and descriptive data.

### B. Highlights of the findings:

In terms of stated goals, Title I projects were in general successful. However, in most cases, goals were stated in terms of services to be provided rather than in terms of change of behavior expected in the students.

Project I - Lengthening of the school day.

#### Results:

A comparison of enrollment figures by type of school organization for the years 1971 and 1972 indicates that within the Title I sector there was a 3% decrease in the double enrollment (3 hours) type of school organization and 1% decrease in the double enrollment (4 hours) type of school organization.

Project Area II - Curriculum Enrichment and Improvement of Pupils'  
Academic Achievement

Academic Achievement

a. Reading

Results:

Test results indicate that although, in general, Title I districts are still achieving mean scores below islandwide norms, in Spanish and English reading, the amount of gain attained from 1971 to 1972 was the same or in some cases slightly better than that attained by the Non-Title I districts included in the testing sample.

The difference between urban and rural zone students within the Title I sector is also smaller than in the Non-Title I sector.

b. Mathematics

Results:

The results indicate there was no significant difference between Title I and Non-Title I groups in the seventh grade, however, significant differences in favor of the Title I groups were observed in the results of the Algebra test administered in the ninth grade.

c. Science

Results:

In the opinion of teachers and on the basis of attendance records, participation in class and science activities such as fairs, field trips, supplementary

readings, etc. there was increased interest in science.

d. Social Studies

Results:

According to scale used by coordinators, about 89% of the 300 teachers stated objectives in behavioral terms by the end of the school year.

Direct observation in 15 classrooms as well as reports from two Regional Supervisors lead to conclude that toward the end of the school year about 87% of the teachers showed satisfactory progress in the use of questions to encourage reflective thinking.

e. Pre-School Education

Results:

In the opinion of teachers, supervisors and Evaluation coordinators, the Kindergarten program succeeded in the development of positive attitudes, skills and social habits of students.

f. Special Education for Handicapped Children

Results

Although educable mentally retarded and trainable mentally retarded students seem to have improved in the academic, social, health and manual skills, the project did not reach its full development because of need of special techniques, guides for teachers, adequate materials and equipment.



## Project Area III - Supportive Services

### Results

Services designed to meet the physical, social and emotional needs of students within the Title I Area were continued and in most cases extended or increased:

- a) Health services offered were highly increased including in 1972 approximately 38,403 students, that is 74.06% of all Kindergarten, first and seventh grade children in 34 districts, 33 of which are within the Title I sector.
- b) Reports of Social Workers reveal that out of a total of 2,644 students identified as potential dropouts, 2,145 (81%) were retained in school.
- c) Opportunities for pupils' development of their recreational and artistic talent continued to include among other activities the following: School theatre, music classes, musical concerts, puppet theatre, plastic arts workshops, art expositions, school bands, visual arts seminar, ballet performances and dramatic arts.

### Aspiration Level of Students

#### Results:

The percentage of twelfth grade graduates indicating plans to study after graduation is the same within the Title I sector as in the rest of the Island. The percentage indicating plans to continue studying at the University level is higher than that from the remaining districts.

A P P E N D I X

ASOCIACION DE ESTUDIANTES DE PUERTO RICO  
COMISION DE INSTRUCCION PUBLICA  
COMISION DE EVALUACION-TITULO I

ENCUESTA DE INFORMACION SOBRE PLANES DE LOS ESTUDIANTES DE  
ESCUELA SUPERIOR

Para ser contestado solamente por estudiantes de duodécimo grado.

1- ¿Por qué terminaste tus estudios de escuela superior?

- A- quiero continuar estudiando solamente
- B- quiero estudiar y a trabajar
- C- quiero trabajar solamente
- D- quiero hacer planes de continuar estudiando ni de trabajar
- E- quiero continuar en el ejército

a) Si contestaste el ítem #1 en la alternativa A, contesta solamente los ítems #2, #3, #4.

b) Si contestaste el ítem #1 en la alternativa B, contesta los ítems #3, #4, #5.

c) Si contestaste el ítem #1 en la alternativa C o en la D, contesta solamente el ítem #6.

d) Si contestaste el ítem #1 en la alternativa E, terminaste y puedes entregar tu cuestionario.

2- Para continuar tus estudios

- A- cuento con recursos económicos suficientes
- B- necesito una beca que cubra todos o gran parte de mis gastos
- C- necesito solamente ayuda para pago de transportación
- D- necesito solamente ayuda para pago de hospedaje
- E- necesito solamente ayuda para libros y materiales de estudios

3- ¿Dónde haces planes de estudiar?

- A- en una universidad o colegio
- B- en una escuela de comercio
- C- en una escuela vocacional
- D- en un instituto tecnológico
- E- mis planes de estudio son diferentes a los expresados en las anteriores

ont. Appendix I

1- tengo planes de estudiar

- A- más de cuatro años
- B- cuatro años
- C- dos ó tres años
- D- un año
- E- menos de un año

2- tengo planes de estudiar

- A- de día y trabajar de noche
- B- de día y trabajar en días libres
- C- medio día y trabajar medio día
- D- cursos nocturnos y trabajar de día
- E- cursos por correspondencia y trabajar de día

3- No voy a continuar estudiando porque

- A- no me interesa
- B- necesitaría una beca, ya que no tengo dinero suficiente
- C- mi familia necesita que yo los ayude económicamente
- D- mis notas son demasiado bajas
- E- mi salud no me lo permite