

SAN DIEGO CITY SCHOOLS  
Office of the Superintendent

REPORT OF THE SUPERINTENDENT  
July 15, 1980

REPORT AND RECOMMENDATIONS ON THE DISTAR PROGRAM

INTRODUCTION

The unfortunate phenomenon of low achievement in minority-isolated schools has been addressed by the district over a period of years. District efforts, supplemented with federal and state support including the Elementary and Secondary Education Act (ESEA) Title I, Follow Through and Head Start, have provided a variety of instructional programs to strengthen educational opportunities in these schools.

Implementation of the DISTAR (Direct Instruction Model) reading program, introduced since 1978-79 to a limited number of classrooms as a requirement of the Follow Through Project, has produced measurable achievement improvement for students and appears to have sufficient merit to warrant its continuance.

INFORMATION ON READING AND EVALUATION

Reading

The act of reading is the process of discovering appropriate meaning in printed or written verbal symbols. For beginning readers, instruction is concerned primarily with teaching recognition of printed symbols that represent speech so that the reader responds intellectually and emotionally as if the material were spoken rather than printed. The reasoning aspect of reading becomes increasingly important as this recognition is mastered. As proficiency in reading increases, individuals learn to adapt their method of reading according to a purpose and the restrictions imposed by the nature of the material. The nature of the task actually changes as the reader progresses from less mature to more mature levels. Reading is not a single skill<sup>1</sup>, but rather numerous interrelated skills which develop over a period of years.

In the teaching of reading, a broad distinction can be made between decoding skills and comprehension skills. Teaching decoding skills helps the child to translate printed symbols into speech sounds. Pronunciation rules and letter-by-letter sounding are stressed, and attention is given to linguistic aspects of the English language, including consonants, vowels, spelling patterns, prefixes, suffixes, compound words, and root words.

The teaching of comprehension skills differs in that it focuses on meaning. Here there is an emphasis on word meaning and use of context; literal comprehension is included with a focus on main ideas, details, and relationships; and inferential comprehension is stressed with attention given to cause and effect, sequence, and application of what appears in the printed text.

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<sup>1</sup>Albert J. Harris and Edward R. Sipay, How to Increase Reading Ability  
(New York: David McKay Company, Inc., 1975), p. 7



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Although most programs for elementary schools address both decoding and comprehension, individual instructional programs treat these skills differently and may emphasize particular skills more than others. As the reader progresses in the acquisition of reading skills, new skill areas are developed which lead to higher levels of thinking and reasoning.

Evaluation

Norm-referenced standardized tests evaluate reading skills differently by including various combinations of test items covering decoding and comprehension. Illustrations of test items used to measure these reading skills follow:

Decoding

1. Mark the word that begins with the same sound as f in fox.  
☐ those      ☐ place      ☒ phone      ☐ chase
2. Mark the word that ends with the same sound as s in was.  
☐ dust      ☒ breeze      ☐ dress      ☐ bus

Comprehension

1. The story you just read is mostly about  
☐ eating lunch.      ☒ seeing dolphins.  
☐ talking.      ☐ swimming.
2. You can tell from this story that it was probably  
☐ a cold day      ☐ a foggy day  
☒ a sunny day      ☐ a wet rainy day

The nature of a particular standardized test selected to measure reading achievement and the approach utilized for teaching reading, together, affect pupil performance on tests. For example, reading tests vary on the weight given to decoding and comprehension. The Comprehensive Tests of Basic Skills (CTBS), Level B, Grade 1, is weighted 71% decoding skills, 29% comprehension skills. The CTBS, Level C, Grade 2, does not contain any decoding items. (See Attachment A for an analysis of the weight given to decoding and comprehension on different levels of the CTBS; a similar analyses of the Metropolitan Achievement Test (MAT) is also included. It should be noted that the various weightings for different grade levels do not always follow the sequence of instruction contained in reading programs, such as DISTAR.

Children need to receive instruction in skills that provide not only a structured but also a sequential development in all aspects of reading. As part of the reading process, children must acquire the full range of decoding skills and learn to



apply them to situations requiring interpretation. As the reading program progresses, comprehension must be mastered if a child is to become a proficient reader and is to achieve gains on standardized tests.

#### DESCRIPTION OF THE DIRECT INSTRUCTION MODEL (DISTAR)

The Direct Instruction Model, published under the trade name of DISTAR, is a program for teaching basic skills to pupils in primary grades. The program is designed for economically disadvantaged pupils in the primary grades.

Reading, language, and arithmetic are the three curricular strands of the DISTAR program. The reading component of DISTAR emphasizes highly structured lessons which teach children to read words through the association of sounds and letters; whereas, the language component emphasizes oral language usage and an understanding of concepts associated with particular words such as over and under, near and far, and in and out. Essential features of the DISTAR teaching model are as follows:

1. Specific time allocated for the teaching of all lessons and uninterrupted time for instruction.
2. Daily programmed lessons. (Every action of the teacher is programmed and every response of the child has an appropriate teacher reaction.)
3. Use of repetition and drill to ensure mastery.
4. Small group instruction for non-readers which is rapidly paced, teacher directed, and positively reinforced.
5. Increased numbers of classroom personnel.
6. Required training and supervision of teaching staff.
7. Use of tests and reports for biweekly monitoring of lessons taught to detect and correct problems.
8. Use of parents as a means of reinforcing the program at home.

Since August 1978, the district has utilized the Direct Instruction Model as part of the Follow Through Project, a federally funded research and development program for children from low-income families. The Direct Instruction Model is one of the approved instructional programs required as a condition for continued funding by the national Follow Through office. The local program is conducted under contract with the University of Oregon acting as sponsor for implementation; representatives from the university staff provide regular supervision, inservice, and evaluation assistance. During the 1979-80 school year, the Direct Instruction Model was utilized in 35 Follow Through classrooms in seven elementary schools: Balboa, Horton, Kennedy, Knox, Logan, Sherman and Stockton. In addition, Emerson and Balboa elementary schools have implemented additional classes, although these are not funded under the Follow Through Project.



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The implementation schedule for this past year includes reading, language and arithmetic at Kindergarten and first grade levels; reading and language at second grade level; and language at third grade level. Instructional personnel are expected during the school year to spend the amount of time on small group instruction necessary for the average student to reach grade level achievement by the end of the third grade.

The schools funded under the Follow Through Project are implementing a plan incorporating the DISTAR program features noted previously. These schools also receive additional funds provided through federal and state categorical programs, such as ESEA, Title I, and the School Improvement Program (SIP). The Follow Through Project, supplemented by these funds, provides for specially trained resource teachers and aides in all classrooms, ongoing training for staff, a monitoring and supervision system including regularly scheduled classroom observations, demonstration lessons, home reading programs for students, parent support programs, health and medical care for children, and attendance at national training seminars for staff.

EVALUATION OF THE DISTAR PROGRAM, 1979-80

The district's recommendations are based upon results from the following achievement tests: (1) the Comprehensive Tests of Basic Skills (CTBS); and (2) the Wide Range Achievement Test (WRAT). The latter test is administered to individual students and measures oral word reading levels. Two reports are included: (1) An Evaluation of the Follow Through Direct Instruction Model in San Diego, prepared by Evaluation Services, University of Oregon, Attachment B; (2) A Summary of Test Data - Follow Through 1979-80, Attachment C.

Major findings on reading achievement are summarized below:

Kindergarten. Results from both the WRAT and the CTBS are significantly above national norm level. Kindergarten pupils scored at the 58th percentile in reading on the WRAT, Level I, administered in May 1980. On the CTBS, Level B, pupils scored at the 72nd percentile when measured also in May 1980. This high score may be attributed, in part, to the fact that Follow Through Kindergarten pupils were compared to a national sample of Kindergarten pupils on a Grade 1 level test. Many of the Kindergarten pupils with whom district pupils were compared may not have had direct instruction in reading.

As reported in the University of Oregon evaluation report, each classroom average is well above the norm sample, ranging from the 60th percentile to the 87th percentile. This is well above performance at these schools in the years immediately before Direct Instruction Model was implemented, and significantly higher than one would predict on the basis of WRAT pretests.

Grade 1. Results from both the WRAT and the CTBS show educationally and statistically significant growth. Grade 1 pupils who began DISTAR in Kindergarten the previous year and had two years in the program scored at the 69th percentile on the WRAT, Level I, in reading administered in May 1980. Posttest scores were significantly higher than pretest scores and in seven of the eight comparisons, students were either near or above the national norm levels.



On the CTBS, Level B, administered in May 1980, pupils scored at the 46th percentile. Again, the University of Oregon evaluation report indicates that the performance of the entire group of first graders who have been in the full year program is within a few percentile points of national norm levels. Four of the seven classes are above grade level.

Grade 2. Results from the WRAT indicate that second grade students who began DISTAR the previous year performed at the 53rd percentile in reading at May 1980. Pupils measured on the CTBS attained the 23rd percentile on the Level C test administered in May 1980. Performance on both the WRAT and CTBS was uneven across classes on both measurements. However, half of the classes did register significant pre-post gains on the WRAT.

The achievement levels registered by Kindergarten and Grade 1 pupils are significantly more impressive than those for Grade 2. A number of factors bear relationship to this: (1) Because of adjustments to new procedures and program, early implementation of the Direct Instruction Model was partial rather than complete; (2) As indicated earlier in this report, the CTBS, Level C, does not include decoding items (association of letters and sounds and the recognition of words) as a part of the test, which is a major component of the DISTAR program. This may account for the differences between the second grade WRAT percentile score and the CTBS. (3) San Diego Follow Through pupils display a very high mobility compared to other Follow Through projects.

In summary, even though no students have completed the four-year sequence of Follow Through, pupils who have completed two years in the sequence are reading, (decoding and comprehending), writing, speaking and doing arithmetic operations very close to or above grade level. The third year of implementation should provide even better results with students continuing to the second grade level.

#### CONCLUSION

Achievement gains made by Follow Through pupils in early reading clearly are evident and promising. There are many unique features of the Direct Instruction Model program design which are particularly beneficial. These include use of programmed materials for staff, careful allocation of individual daily program time, use of positive reinforcement techniques, highly structured monitoring and supervision systems for program implementation, uninterrupted time for instruction, and use of parents to reinforce the reading program at home. These features, along with others previously mentioned, unquestionably have contributed to the success of the program.

Additionally, part of San Diego's success with DISTAR can be attributed to the support obtained under the provisions of the federally funded Follow Through Project. Without supplementary support, achievement gains expected in the district might not be readily attainable.



Although the district recognizes the benefits of the Direct Instruction Model reading program for pupils in minority-isolated schools, it also must address the fact that students do not continue to make the same degree of progress in Grade 3. Efforts begun in Kindergarten and Grade 1 this year will be expanded to subsequent grade levels to enable pupils to reach grade level achievement in reading by the end of the third grade.

District staff, including the principals and teachers in the Follow Through program, believe that DISTAR is one approach in reading instruction which has beneficial effects. The strong foundation it provides in word recognition is certainly one of the primary strengths of the program. DISTAR is a good reading program that can be used to serve some pupils in some schools and it should continue to be utilized.

Leading educators seem to be in agreement that there is no single remedy to underachievement. National Academy of Education panel members conclude in a significant investigation that there are no panaceas for improving educational achievement. They do note, however, that research suggests some promising directions. They address the striking convergence of evidence which points to the value of "time-on-task" and "engaged time" in improving performance. Other suggestions they note include the need for challenging material, a beginning decoding emphasis in reading, early diagnosis and remediation, and mastery learning.<sup>2</sup>

District staff is confident that a program in reading in designated minority-isolated schools can be successfully implemented so that it builds on the strengths of DISTAR and at the same time is consistent with the district's Achievement Goals Program. Such an approach will allow children to acquire the full spectrum of reading skills necessary for overall improved achievement.

#### RECOMMENDATIONS

Based on the foregoing information, it is the intent of the Superintendent to submit the following recommendations for action by the Board of Education on July 22, 1980:

1. Expand the Direct Instruction Model program to additional Kindergarten and Grade 1 classes in the following schools: Kennedy, Mead, Sherman, and Stockton elementary schools (see Attachment D).
2. Allow expansion of the Direct Instruction Model program to Grade 2 for those pupils who have been in the program in Grade 1. Also, allow expansion to Grade 3 for those pupils who have been in the Direct Instruction Model program for only one or two years.

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<sup>2</sup> Improving Educational Achievement, Report of the National Academy of Education Committee on Testing and Basic Skills to the Assistant Secretary of Education (Washington, D.C.: National Academy of Education, 1978), p.iii.

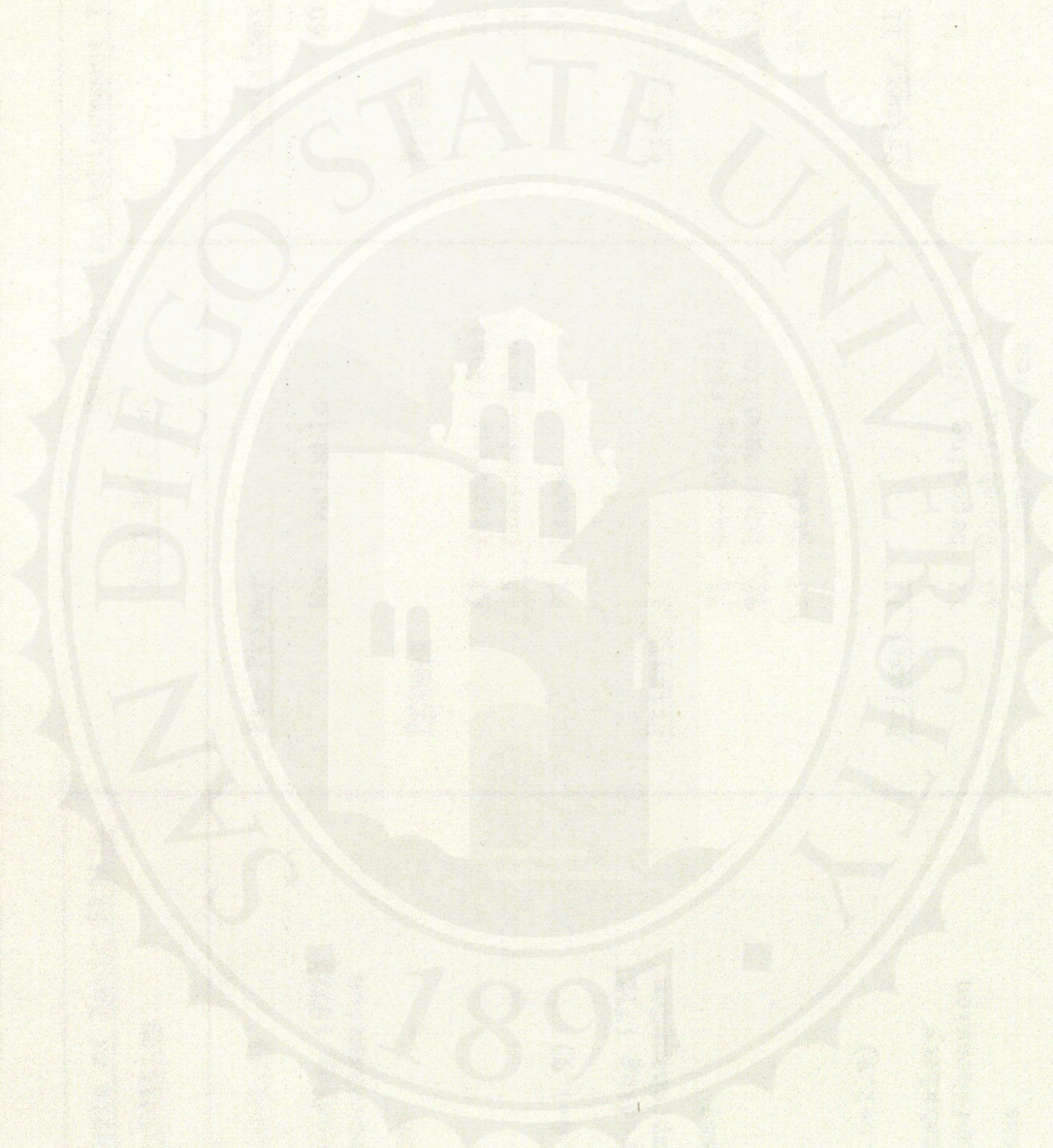


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3. Request allocation of \$168,530 to provide necessary staff and resources for implementation of the Direct Instruction Model in the proposed new classes (see Attachment E).
4. Initiate a transition program at second and third grade to prepare students for the district's Achievement Goals Program.



RP:lg



SAN DIEGO CITY SCHOOLS  
Programs Division

AN ANALYSIS OF TEST ITEMS MEASURING READING SKILLS ON THE CTBS AND THE MAT

<u>Comprehensive Tests of Basic Skills</u> <u>1973 Edition</u>	<u>Metropolitan Achievement Tests</u>	
	<u>1971 Edition</u>	<u>1978 Edition</u>
<u>Level A</u> (Gr. K.0-1.3)	<u>Pre-Primer</u>	<u>Pre-Primer</u> (Gr. K.0-K.5)
104 Decoding (87%)	Not Available	60 Decoding (100%)
16 Comprehension		
120 Items		
	<u>Primer</u>	<u>Primer</u> (Gr. K.5-1.4)
	67 Decoding (93%)	12 Decoding (32%)
	5 Comprehension	25 Comprehension
	72 Items	37 Items
<u>Level B</u> (Gr. K.6-1.9)	<u>Primary I</u>	<u>Primary I</u> (Gr. 1.5-2.4)
60 Decoding (71%)	75 Decoding (64%)	73 Decoding (71%)
24 Comprehension	42 Comprehension	103 Comprehension
84 Items	117 Items	176 Items
<u>Level C</u> (Gr. 1.6-2.9)	<u>Primary II</u>	<u>Primary II</u> (Gr. 2.5-3.4)
33 Vocabulary	52 Decoding (38%)	55 Comprehension
41 Comprehension	40 Vocabulary	
74 Items	44 Comprehension	
	136 Items	



San Diego Follow Through Project  
Evaluation Report 1979-80 School Year

Russell Gersten, Ph.D.

Paul Williams, Ph.D.

Evaluation Services  
Direct Instruction Follow Through  
University of Oregon  
July 8, 1980



### Acknowledgements

The preparation of this report in such a short amount of time would have been impossible without the expert programming of Jane Donahue and Mary Moffat, keypunching and organizational skills of Kay Bryant and the support of Ralph Green and Grant Behnke of San Diego Unified School District.



This report is part of the USOE-supported study of the implementation of the Direct Instruction Follow through model in San Diego. The focus of this report is the documentation of academic growth of Follow Through students in kindergarten, grade 1 and grade 2 during the second year of implementation.

Description of the students, the Test and the Design.

Kindergarten students in this sample receive the Direct Instruction (Distar) programs in Reading, Language, and Math. They are the second cohort of children in Direct Instruction Follow Through. Since only a small proportion of these children were pretested in the fall, a post-test only design was used for kindergarten. The objectives of the Follow Through Project was that the mean CTBS (Comprehensive Test of Basic Skills) scores in Reading and Math be at or above national norm levels after one full year of instruction. Therefore only children who were in the program for at least 8 months (i.e. entered the program on or before October 15, 1979), are included in the evaluation sample. Thus, due to the high attrition rate in many classrooms, the sample size is smaller than that of the San Diego school district's evaluation report. Students were tested on Level B of the CTBS rather than Level A (which is routinely used in San Diego Title I evaluation). The reasons were twofold:

- a) the CTBS manual indicates that kindergarten children who have been in school for at least 4 months should be tested on Level B
- b) the content of Level B Reading and Math subtests closely matches the objectives of Direct Instruction Follow Through; the content of Level A, which is basically a readiness test does not match the objectives of the program.

A secondary goal was that students show significant growth against the norm sample of the Wide Range Achievement Test in the area of Reading (Decoding).



## First Grade

This is the second year of Direct Instruction Reading and Language for these children and the first year of Distar Arithmetic. (Exception: Kennedy School, where this is the first year of Distar in all areas.) This group can be looked at as Cohort 1 of Direct Instruction Follow Through except that:

a) many students did not begin Reading in kindergarten until February,  
b) students did not begin Distar Arithmetic until September, 1979. A pre-post norm-referenced design (Horst, Tallmadge & Wood, 1975) was used for this sample. The pre-tests were the Prereading, Math, and Language subtests of the CTBS Level A and the Reading Subtest of WRAT Level <sup>A</sup><sub>2</sub>, in May, 1979. The post-tests, administered in May, 1980 were Total Reading, Math, and Language scores on CTBS Level B and WRAT Reading, Level I. The content validity of the Reading and Math tests in the CTBS Level B is high (see Gersten, 1976); the relevance of the Language subtests to the goals of Follow Through is low to moderate. WRAT reading is a reliable test of decoding, which is viewed as a major goal of instruction during kindergarten and the first grade.

CTBS pre-post data are supplemented by post test only data for all children in the program for the entire year, even those who were not pre-tested. The mean scores for this larger sample are not significantly different than those for the smaller "pre-post" sample.

## Grade 2

These children began Direct Instruction Reading and Language in grade 1. They did not receive Distar Arithmetic. They thus seem to be a transitional cohort of children, beginning Level 1 Reading and Language one year later than desirable, and receiving non-Distar Math instruction. The quality of implementation in several of the grade 1 classrooms was low in 1978-9; (cf. Haddox, 1979); several of these classes thus did not seriously begin Direct



Instruction until this fall. The design for this group is analogous to the design for grade 1, pre-post norm-referenced comparisons using CTBS Level B (May, 1979) as the pretest and Level C (May, 1980) WRAT Reading data are used as a supplement as the post-test.

## RESULTS

### Kindergarten

CTBS Level B mean scale score and percentile equivalents for all kindergarten classes can be found on Table 1. The bottom line is the pooled score for the entire sample of 106 children in the program for the entire year. Table 2 presents mean WRAT Reading standard scores and percentile equivalents for the pre-post comparisons by class. The magnitude of treatment effects (educational significance) and statistical significance of each comparison is also reported.

As can be seen on Table 1, the mean score for CTBS Total Reading is significantly above the national norm level (72 percentile for the entire sample). Each classroom average is above the norm sample, ranging from 60 percentile to 87 percentile. This is well above performance at these schools in the years immediately before Direct Instruction was implemented, and significantly higher than one would predict on the basis of WRAT pretests. It is extremely high performance for a group of low income, largely minority schools.

The mean total CTBS math score corresponds to the 57th percentile, again above national norm levels. One class is performing poorly (29th percentile), due to the inadequacy of the instructional aide in that classroom who has been recently transferred. In all other cases, classes are at or above national performance levels.

Subtest by subtest breakdown on the CTBS indicates high performance



Grade: K

Table 1. Kindergarten CTBS - Posttest Only

Level B

	N:	Letter Sounds			Wrd Recog I			Read Comp			Wrd Recog II			TOTAL READING			Conc & Appl			Computation			TOTAL MATH		
		X	SD	%ile	X	SD	%	X	SD	%	X	SD	%	X	SD	%	X	SD	%	X	SD	%	X	SD	%
Horton:	20	211	12.7	73	187	63	27	197	12.6	46	208	13.6	69	212	21	64	208	23.4	68	235	18.4	60	222	16	61
1																									
2	13	209	14.9	70	203	14.8	59	199	13.4	50	202	13.2	56	208	21.1	60	198	17.5	48	234	17.2	59	220	11.1	58
Balboa:	10	226	18.6	91	210	12.5	73	199	11.6	50	206	14.4	65	226	23.4	77	203	14.5	58	240	15.6	68	226	20.4	66
3																									
Knoz:	10	208	14.6	68	211	14	75	201	11	54	209	17.8	71	216	26.1	68	200	14.6	52	227	13.3	47	210	25.1	45
4																									
Logan:	16	211	14.7	73	202	19.3	57	201	8.8	54	205	21.1	63	206	31	58	182	17.3	19	228	12.8	49	198	15.2	29
5																									
Sherman:	16	223	11.7	89	220	17.5	87	205	12.1	62	225	9.2	93	240	19.9	87	213	22.3	76	239	30.6	66	230	37.9	71
6																									
Stockton:	13	227	13.4	92	210	12.7	73	211	13.8	74	215	12.1	81	237	18	85	216	13.8	81	237	19.3	63	234	21.3	75
7																									
8	8	215	22.3	79	206	8.9	65	201	14.5	54	204	14	61	214	24.5	66	186	17.6	25	238	19.7	65	214	26.8	50
All Children	106													219.7	--	72							219.4	--	57



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		X	SD	%ile	X	SD	%	X	SD	%	X	SD	%	X	SD	%	X	SD	%	X	SD	%	X	SD	%
Horton:	20	211	12.7	73	187	63	27	197	12.6	46	208	13.6	69	212	21	64	208	23.4	68	235	18.4	60	222	16	61
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All Children	106													219.7	--	72							219.4	--	57



in both basic skills areas (Letter Sounds, Math Computation) and higher order cognitive areas (Math Concepts and Applications, Reading Comprehension.)

In interpreting CTBS results, one must be aware that this is a post-test only presentation. Some teachers had students beginning at far lower skill levels than others; thus, it would be unfair to assess teacher performance solely on the basis of these unadjusted scores. Although the WRAT Reading comparisons (Table 2) are limited to the decoding words in isolation, the availability of pre test data on the kindergarten students does allow a reasonable assessment of fall to spring growth. Correlated t tests indicated that WRAT Reading post test scores in all but one of the Kindergarten classes significantly improved from their respective pretest scores. In every comparison, the magnitude of effects was educationally significant by USOE standards (Horst, Tallmadge & Wood, 1975), and in six of the eight classroom comparisons, the average WRAT Reading post test percentile was above national norm levels.

### Grade 1

Table 3 presents pre and post scores on Total Reading and Total Math for all first graders present for last spring's test cycle and this spring's test. Table 4 presents mean scores for all students present for the entire school year. The comparability of scores indicates that the smaller, pre-post sample is a representative evaluation sample.

For the 78 children in the sample, one sees educationally and statistically significant growth in Reading from a mean score corresponding to the 18th percentile on Level A (the Readiness test) to the 46th percentile at the end of Grade 1. Four of the seven classes are above grade level.

WRAT Reading post test scores were significantly higher than pretest scores (See Table 2; in seven of the eight comparisons, students were either



Table 2  
Norm-Referenced Comparisons--  
1979-80 WRAT READING

Kindergarten	Class	PRE (Standard Score) $\bar{X}$ (S.D.)	POST $\bar{X}$ (S.D.)	PRE-POST PERCENTILES	MAGNITUDE OF EFFECTS (in pooled SD units)
	1	90.7 (10.4)	105.5 (18.4)	25th-66th*	.990+
	2	93.8 (20.9)	104.5 (19.4)	34th-63rd*	.531+
	3	--a	96.1 (14.1)	39th	--
	4	93.5 (11.5)	97.1 (17.4)	34th-42nd	.244+
	5	86.4 (7.6)	102.6 (17.4)	18th-58th*	1.020+
	6	82.6 (9.9)	96.4 (17.9)	13th-39th*	.954+
	7	88.2 (11.0)	101.6 (12.1)	21st-55th*	1.159+
	8	87.3 (13.1)	100.1 (17.6)	19th-50th*	.825+
<hr/>					
<u>Grade 1</u>					
	1	105.5 (18.9)	123.9 (9.7)	66th-95th*	1.224+
	2	96.2 (14.7)	124.8 (17.8)	39th-95th*	1.752+
	3	89.1 (9.4)	115.7 (24.3)	23rd-84th*	1.444+
	4	103 (19.9)	118.4 (20.8)	58th-88th*	.757+
	5	77.5 (9.8)	86.7 (10.9)	7th-19th**	.888+
	6	95.5 (13.5)	107.5 (12.6)	39th-68th*	.919+
	7	96.4 (14.6)	112.8 (17.1)	39th-81st*	1.032+
	8	92.7 (13.8)	98.9 (9.9)	32nd-47th*	.516*
	9	96.3 (12.8)	100.7 (13.4)	39th-53rd**	.336+
<hr/>					
<u>Grade 2</u>					
	1	91.1 (21.7)	101.6 (12.9)	27th-54th*	.588
	2	109.0 (22.0)	99.6 (14.3)	73rd-49th**	-.507
	3	99.2 (17.7)	101.1 (14.1)	48th-53rd	.119
	4	101.1 (9.6)	115.1 (16.1)	53rd-84th*	1.056+
	5	85.5 (8.15)	92.4 (15.1)	18th-31st	.544+
	6	64.7 (8.0)	99.8 (8.04)	1st-49th*	4.377+
	7	99.8 (25.1)	99.6 (20.3)	50th-49th	.009
	8	86.4 (7.9)	94.3 (12.7)	18th-35th*	.747+

\* =  $p < .01$

\*\* =  $p < .05$  (determined with a one-way correlated t test)

+ = educationally significant growth

a = no pretest available



Table 3  
BREAKDOWN BY TEACHER FOR FIRST GRADE

<u>CTBS READING</u>								
<u>Class</u>	PRE				POST			
	MAY, 1979	(Level A)			MAY, 1980	(Level B)		
	Scale Score	N	S.D.	%tile	Scale Score	N	S.D.	%tile
1	167.2	15	55.3	20th	269.1	15	22.4	55th
2	154.2	9	73.8	12th	301.8	9	29.3	79th
3	171.8	12	90.1	24th	269.5	12	38.0	56th
4	166.5	11	64.1	20th	261.5	11	33.9	48th
5	184	12	--- <sup>a</sup>	35th	248	12	-- <sup>a</sup>	37th
6	151.9	8	66.1	11th	276.1	8	24.1	61st
7	157.47	15	23.2	13th	237.5	15	71.2	29th
ALL	164.2	78	58.9	18th	259.3	78	53.5	46th

<u>CTBS MATH</u>								
	PRE				POST			
	MAY, 1979	(Level A)			MAY, 1980	(Level B)		
	Scale Score	N	S.D.	%tile	Scale Score	N	S.D.	%tile
1	191.3	15	59.9	22nd	260.6	15	37.8	51st
2	186.6	9	76.6	18th	283.4	9	33.6	74th
3	174.2	12	86.3	9th	251.3	12	32.4	41st
4	189.5	11	69.2	21st	252.2	11	38.2	42nd
5	207	12	--	41	251	12	--	41st
6	188.8	8	33.1	20th	267.4	8	25.0	57th
7	184.3	15	22.9	5th	244.7	15	20.7	35th
ALL	188.5	78	57.3	20th	255.4	78	33.2	46th

<sup>a</sup>Standard deviation unavailable



Table 4

Mean Standard Scores and Percentiles by Subtest  
for all Children in the Program for the Full Year  
--Grade 1 (Level B, CTBS Form S)

<u>Letter Sound</u>		<u>Word Recogn. I</u>		<u>Word Recogn. II</u>		<u>Read. Comp.</u>		<u>Total Reading</u>	
<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>
235.8	53rd	227.3	37th	227.8	38th	221.0	41st	260.2	47th

<u>Conc. &amp; Appl.</u>		<u>Computation</u>		<u>Total Math</u>	
<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>
216.3	30th	266.1	56th	260.5	52nd

∞



near or above the national norm levels. As in the case of the Kindergarten WRAT comparisons, the magnitude of effects was significant for all of the first grade pre-post difference.

In CTBS Math, there is a phenomenon comparable to that seen in CTBS Reading; a statistically and educationally significant growth from the 20th to the 46th percentile. The values in Table 4 demonstrate that performance of the entire group of first graders who have been in the full year program is within a few percentile points of national norm levels in Reading and Math. This is well above the predicted scores for inner city, low-income first graders and well above comparable scores at these schools in 1977 and 1978.

## Grade 2

Table 5 presents CTBS pre-post analyses by classroom for Grade 2. These children are in DISTAR Reading and Language only. The picture here is certainly less optimistic than in kindergarten or grade 1. One must recall that these students did not have any DISTAR programs in kindergarten. Due to several teachers' low levels of implementation last year, many children did not have much instruction in Direct Instruction Reading last year; certainly, the end-of-Grade 1 CTBS Level B scores of 28th percentile is far below this year's (46th percentile). The group demonstrates a slight, non-significant loss against the national norm sample (28th to 23rd percentile). There are no significant differences between the pre-post sample and the post-test only sample (Table 6).

The same pattern of lackluster performance is seen in 2nd Grade WRAT Reading, with two of the classrooms registering a loss from pre to post testing (See Table 2). Even at that, half of the classes did register a significant pre-post gain and five of the eight classes had significant



magnitude of effects analyses.

### Summary

Mean kindergarten scores are above national norm levels in both Reading and Math. The first graders demonstrate statistically and educationally significant gains against the norm group in Reading and Math, coming within a few percentile points of national norm levels. This is well above expected scores for students in low income, minority schools. Grade 2 students do not replicate this pattern; they began the program late (in sometimes inadequate situations) and do not seem to have the same solid background for growth as the other two groups of children.



Table 5

## BREAKDOWN BY CLASS FOR SECOND GRADE

READING

Class	PRE MAY, 1979 (Level B)				POST MAY, 1980 (Level C)			
	Scale Score	N	S.D.	%tile	Scale Score	N	S.D.	%tile
1	235.0	17	20.2	27th	262.0	17	39.4	14th
2	261.8	10	25.0	49th	257.6	10	95.8	13th
3	240.0	10	29.8	31st	295.7	10	46.4	31st
4	249.9	15	21.4	39th	301.1	15	29.7	34th
5	171.6	7	80.2	2nd	234.7	7	24.1	6th
6	238.9	9	39.4	30th	313.9	9	28.2	43rd
7	259.5	17	24.1	47th	302.1	17	23.2	35th
8	198.2	14	77.2	8th	249.8	14	44.7	10th
9	249.2	5	15.2	38th	295.6	5	167.9	31st
ALL	235.8	104	47.7	28th	279.8	104	59.2	23rd

LANGUAGE

Class	PRE MAY, 1979				POST MAY, 1980			
	Scale Score	N	S.D.	%tile	Scale Score	N	S.D.	%tile
2	232.7	10	86.6	18th	243.9	10	133.0	4th
3	185.7	10	99.0	4th	303.3	10	41.4	20th
4	170.4	15	110.9	2nd	347.9	15	52.9	43rd*
5	202.6	7	23.9	7th	230.9	7	27.6	4th
6	228.7	9	47.2	17th	250.4	9	144.8	5th
7	269.8	17	21.7	41st	296.8	17	31.6	17th
8	218.0	14	76.2	12th	266.7	14	39.8	8th
9	267.2	5	17.3	39th	292.0	5	163.6	15th
ALL	220.6	89	—	13	285.1	87	—	13th

\* Significant gain



Table 6

Mean Standard Scores and Percentiles by Subtest  
for all Grade 2 Children in Program for the Fall- CTBS Reading

<u>N</u>	<u>Vocabulary</u>		<u>Sentences</u>		<u>Passages</u>		<u>Total Reading</u>	
	<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>	<u>Mean SS</u>	<u>%ile</u>
202	296.4	28	269.2	27	262.3	24	288	27



## References

- Gersten, R. Technical Report 79-1 The San Diego implementation study: Interim report. University of Oregon, Eugene, OR, 1979.
- Haddox, P. Final Report: San Diego Direct Instruction Follow Through Project. July, 1979.
- Horst, D.P., Tallmadge, G.K., & Wood, C.T. A practical guide for measuring project impact on student achievement. Washington, D.C.: U.S. Government Printing Office, 1975.



## San Diego City Schools

SUMMARY TEST DATA - FOLLOW THROUGH  
1979-80 (POSTTEST ONLY - SPRING 1980)

Grade	CTBS*			WRAT**		
	N	Mean Scale Score	Percentile	N	Mean Scale Score	Percentile
K Level B	106	219.7	72	124	102.9	58
1 Level B	78	259.3	46	111	108.7	69
2 Level C	104	279.8	23	103	100.6	53

\* Adapted from Gersten, Russell: Preliminary Evaluation Report, 1979-80 School Year

\*\* Weighted calculations based on memo of Russell Gersten, 6-20-80, University of Oregon to San Diego City Schools

WLW:jc  
7-11-80



SAN DIEGO CITY SCHOOLS  
Programs Division

DIRECT INSTRUCTION MODEL (DISTAR) PROPOSED EXPANSION

School	1979-80 Program*			1980-81 Expansion		
	Grade Level	Number of Classes	**Subject Areas	Grade Level	Number of Classes	**Subject Areas
Balboa	K	1	R/M/L			
	1	1	R/M/L			
	2	1	R/M/L			
	3	1	R/M/L			
	Transition	1	R/M/L			
Horton	K	2	R/M/L			
	1	1	R/M/L			
	2	2	R/L			
	3	1	L			
Kennedy	1	2	R/L	K	2	R/L
	2	2	L	1	1	R/L
				2	1	R/L
				3	1	R/L
Knox	K	1	R/M/L			
	1	1	R/M/L			
	2	1	R/L			
	3	2	L			
Logan	K	1	R/M/L			
	1	1	R/M/L			
	2	2	R/L			
	3	1	L			
Mead	No DISTAR Program			K	1	M/L
				K-1	1	M/L
				K-1-2	2	M/L
				1	1	M/L
				1-2	1	M/L
				Primary		
				Multigrade	4	M/L
Sherman	K	1	R/M/L	K	2	R/M/L
	1	1	R/M/L	1	2	R/M/L
	2	1	R/L	2	1	R/M/L
	3	1	L			
Stockton	K	2	R/M/L	K	1	R/M/L
	1	2	R/M/L	1	1	R/M/L
	2	1	R/L	1-2	1	R/M/L
	3	1	L	2	1	R/M/L

\* R stands for Reading; M for Mathematics; and L for Language.

\*\* Direct Instruction Model classes at Emerson Elementary School and non-Follow Through classes at Balboa Elementary School are not included in this chart.



SAN DIEGO CITY SCHOOLS  
Programs DivisionDIRECT INSTRUCTION MODEL (DSTAR) PROPOSED EXPANSION  
Budget

1.0 Resource Teacher	\$ 30,558.55*
Instructional Aides/Hourly (math aides and continuous testers)	43,986.32*
.4 Instructional Aide (program data collector) (10 month or 10Y)	4,721.94*
Office Supplies, Mileage, Duplicating	10,400.00
Staff Development:	
1. Attendance of Principals and Resource Teachers at Oregon Conference	4,500.00
2. Inservice for Teachers and Paraprofessionals	13,249.00
3. Consultant Services - University of Oregon DIM Staff	6,000.00
DISTAR Materials and DISTAR Library	30,673.00
Administrative Responsibility for Proposed Expansion	
.4 Administrator (level 9; 12 month)	16,824.31*
.4 Secretary II (12 month)	<u>7,616.61*</u>
TOTAL	<u>\$168,529.73*</u>

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\*Includes salary and benefits.he  
7/10/80