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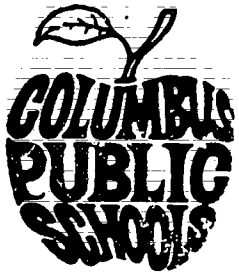
ABSTRACT

The Compensatory Language Experiences and Reading-Reading Recovery Program (CLEAR-RR) provided early intervention to 224 underachieving first grade pupils in Columbus, Ohio schools. The program's two major goals were to develop and provide CLEAR-RR for the first grade pupils and to adapt and apply the inservice program for teachers. Specially trained teachers provided one-on-one half-hour daily lessons during the 1985-1986 school year. Pupils included in the final pretest-posttest analysis had received 60 or more instructional lessons. Activities included reading and rereading books while the teacher maintained a record of strategies and errors, writing and reading stories, identifying letters, and analyzing sounds in words. Students discontinued the program when they had successfully achieved predetermined levels on the Reading Recovery Diagnostic Survey and the vocabulary and comprehension subtests of the Comprehensive Tests of Basic Skills, Levels B and C. Analyses of the standardized test data included comparison of Total Reading scores, pretest to posttest, using percentiles and Normal Curve Equivalents. Based on positive results recommendations were to continue CLEAR-RR at its current level, to share techniques with teachers in other programs, and to investigate the possibility of expanding services to more pupils. (Tables of results are included.) (AEW)

Education Consolidation and Improvement Act - Chapter 1

FINAL EVALUATION REPORT
LANGUAGE DEVELOPMENT COMPONENT
CLEAR-READING RECOVERY PROGRAM
1985-86

March 1987



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FINAL EVALUATION REPORT
LANGUAGE DEVELOPMENT COMPONENT
CLEAR-READING RECOVERY PROGRAM
March 1987

Abstract

Program Description: The CLEAR-Reading Recovery Program (CLEAR-RR) served 224 pupils in first grade. Funding of the program was made available through the Education Consolidation and Improvement Act - Chapter of 1983.

The purpose of CLEAR-RR is to provide early intervention to underachieving first-grade pupils who appear unlikely to learn to read successfully without intensive instruction. To accomplish this purpose CLEAR-RR features individualized one-to-one lessons thirty minutes daily provided by specially trained teachers. The lessons are based upon diagnostic instruments designed to provide a comprehensive assessment of the pupil's development in reading and writing strategies. The program, based upon the Reading Recovery Program of New Zealand which was developed by Dr. Marie Clay, is a joint effort of educators in Columbus Public Schools, The Ohio State University, and the Ohio Department of Education. Data from the New Zealand program indicated that 90% of the pupils were recovered.

CLEAR-RR was located in 12 elementary schools with a total of 30 teachers serving four or more pupils daily, normally for one-half day, while working as first-grade teachers for the other half of the day.

Time Interval: For evaluation purposes CLEAR-RR ran from September 30, 1985 thru June 3, 1986. Pupils included in the final pretest-posttest analysis must have had 60 or more instructional lessons or were discontinued, that is, successfully completed the program.

Activities: Implementation of CLEAR-RR was accomplished through daily 30 minute lessons, during which the pupils were engaged in a variety of instructional activities, namely, reading and re-reading books while the teacher maintained a record of their strategies and errors, writing and reading their own stories, letter identification, and sound analysis of words.

Achievement Objective: Pupils were to receive instruction in the program long enough to be discontinued from CLEAR-RR. Discontinued pupils were those who successfully completed the program according to the predetermined levels on diagnostic measures. They were to have made sufficient progress to work in the normal classroom setting without further need for individual help.

Evaluation Design: Questions regarding the success of the program were based upon two major goals: to develop and provide CLEAR-RR for first-grade pupils, and to adapt and apply the necessary inservice program for teachers. Question 1: What were the performance levels of pupils discontinued or with 60 or more lessons on a standardized test of reading? Question 2: What were the pretest and posttest levels of performance of pupils on the six diagnostic measures employed in Reading Recovery? Question 3: How do CLEAR-RR pupils compare to pupils in other compensatory programs? Question 4: What were the costs of CLEAR-RR compared to other compensatory programs? Question 5: What were the long term effects of CLEAR-RR ? Question 6: What were the service patterns of CLEAR-RR?

The major evaluation effort was accomplished through two types of tests: the administration of the Reading Recovery Diagnostic Survey which yields scores and gains in letter identification, word tests, concepts about print, writing vocabulary, dictation, and text reading levels; and the administration of the vocabulary and comprehension subtests of the Comprehensive Tests of Basic Skills (CTBS), Levels B and C. Analyses of the standardized test data included comparison of Total Reading change scores, pretest to posttest, in terms of percentile and NCE scores. Locally constructed instruments were developed to obtain enrollment/attendance data.

Major Findings/Recommendations: Analysis of data indicated that 285 first-grade pupils were selected to be served, of which 224 actually received service. The average enrollment was 89.0 days; the average attendance was 70.9 days; the average number of instructional lessons was 60.6; while the average daily membership was 125.4 pupils.

A total of 155 pupils were either discontinued (104) or received 60 or more lessons (51). Of this group, the evaluation sample with both a CTBS pretest and posttest consisted of 141 pupils.

A review of the data indicated that the median percentile score in Total Reading was 16.0 on the pretest and 28.0 on the posttest. The mean NCE score was 28.0 on the pretest and 36.5 on the posttest. Therefore, the average growth was 8.5 NCE points. The number and percent of pupils who were at various percentile levels on the posttest are as follows: (a) 28 or 19.9% were at the 50%ile or above (grade level); and (b) 86 or 61.0% were at the 36%ile or below (Chapter 1 eligible).

The average NCE gain of 8.5 made by the sample of 141 CLEAR-RR pupils compares favorably with the 0.9 NCE gain made by the sample of 103 first-grade pupils enrolled in the regular public school CLEAR program and the 0.2 NCE gain made by the sample of 1185 Instructional Aide pupils. However, when pupils scoring below the 37%ile on the pretest were compared, it was found that the average NCE growth for CLEAR-RR was 12.1, for regular public school CLEAR the average gain was 7.1 NCE points, and for the Instructional Aide pupils the NCE growth was 3.6. For the pupils scoring below the 37%ile on the pretest, the cost per NCE point gain was $342 for CLEAR-RR, $140 for regular public school CLEAR, and $262 for the Instructional Aide group.

On the Reading Recovery Diagnostic Survey, the following mean scores were obtained for September and May from a sample of 144 CLEAR-RR pupils who were discontinued or had 60 or more instructional lessons: Letter Identification, 34.87 to 51.56; Word Test, 2.02 to 13.24; Concepts About Print, 7.31 to 16.05; Writing Vocabulary, 2.96 to 33.25; Dictation, 5.24 to 30.16; Text Reading Level, 1.77 to 9.53.

Data regarding long term effects from early February, 1987 indicated that of the 155 pupils who were discontinued or had 60 lessons or more, 40 (25.8%) were retained in first grade. Also, of the 155 pupils, 67 were in a school and at a grade level where a compensatory program was serving other pupils. Of the 67 pupils, 20 (29.9%) were being served in a compensatory program at that school.

Recommendations were to continue CLEAR-RR at its current level; to share the successful teaching techniques and development of successful pupil reading strategies with teachers in other programs; and to investigate the possibilities of providing services to more pupils with the current staffing levels.

FINAL EVALUATION REPORT
LANGUAGE DEVELOPMENT COMPONENT
CLEAR-READING RECOVERY PROGRAM
1985-86

Program Description

The purpose of the Compensatory Language Experiences and Reading - Reading Recovery (CLEAR-RR) Program is to provide early intervention to underachieving first-grade pupils who appear unlikely to learn to read successfully without intensive instruction. To accomplish this purpose the program features individualized one-to-one lessons 30 minutes daily provided by specially trained teachers. The lessons are based upon diagnostic instruments which are designed to provide a comprehensive assessment of the pupil's development in reading and writing strategies.

The CLEAR-RR Program first operated as a pilot project during the 1984-85 school year. The Columbus Public Schools is the first school system in the United States to attempt a program similar to Reading Recovery that was developed in New Zealand by Marie Clay, a renowned psychologist and educator. The CLEAR-RR Program was initiated as a joint effort of educators in Columbus Public Schools, The Ohio State University (OSU), and the Ohio Department of Education (ODE), with assistance by Dr. Clay and others from New Zealand.

Dr. Clay's early intervention strategies have been employed increasingly in New Zealand since 1976, with the result that children at risk of reading failure throughout the years have made exceptional progress in learning to read. Often, as many as 90% of the pupils were able to work within the average range in their classrooms after approximately 12 to 14 weeks of individual tutoring (Clay, 1985). Dr. Clay's Reading Recovery Program fits in well with the whole language approaches used to teach all children to read in New Zealand which is, according to Becoming a Nation of Readers (Anderson, Hiebert, Scott, & Wilkinson, 1985), the most literate country in the world.

In 1984-85 the project operated in six elementary schools, served approximately 70 children, and was staffed by 14 CLEAR-RR teachers, three teacher leaders from the school system, and university personnel, all of whom worked individually with pupils in the Reading Recovery project.

In 1985-86 the CLEAR-RR Program was expanded to consist of 30 teachers, each working with four or more pupils daily plus 11 additional personnel working with one or two pupils daily. Officially, CLEAR-RR had 16 full-time equivalent teachers. Normally a CLEAR-RR teacher worked as a first-grade teacher for a half-day and served individual pupils for 30 minutes each during the other half-day. Two CLEAR-RR teachers worked with individual pupils for the entire day. The program served a total of 224 pupils in the following 12 elementary schools.

Schools Served by the
CLEAR-Reading Recovery Program

Avalon	Como	Hubbard
Beck	Cranbrook	Linden
Burroughs	Dana	Medary
Clarfield	Fairwood	Pilgrim

In Columbus Public Schools the format for diagnosis developed by Dr. Clay and others is followed closely with minor revisions. At the beginning of the school year first-grade pupils (in some classes the entire class, in others the lower half of the class) take a diagnostic survey of reading and writing tests: Letter Identification, Ohio Word Test, Concepts about Print, Writing Vocabulary, Dictation Test, and Text Reading. These tests are also administered at various times throughout the year as pupils enter or exit the program and again at the conclusion of the year to CLEAR-RR participants and other selected pupils.

Pupils are selected for the CLEAR-RR Program on the basis of low diagnostic test scores which indicate that they are not likely to learn to read successfully in a regular classroom environment. Selection occurs prior to the program norm-referenced pretest.

Each pupil entering the program spends approximately the first 10 days "Roaming In the Known." During this period the CLEAR-RR teacher builds rapport with the pupil and provides an opportunity for the pupil to use the strategies the pupil already knows in meaningful reading and writing activities. Once the Reading Recovery lessons begin, a familiar pattern is established. A typical 30 minute lesson includes most or all of the following activities.

1. Two or more familiar books selected by the pupil are read to the teacher.

2. The teacher makes a running record of the book attempted by the pupil the previous day. During this time the CLEAR-RR teacher changes the focus from instruction to scientific observation. Meaning, structure, and visual cues are analyzed to determine which cues are used or neglected by the pupil. The teacher carefully records each day the development of reading strategies by the pupil.

3. During letter identification, plastic letters are used on a magnetic board.

4. The pupil writes a story with the teacher's help.

5. During sound analysis of words, the pupil is encouraged to say the word slowly and write what can be heard.

6. A cut-up story is rearranged by the pupil.

7. A new book is introduced by the teacher.

8. The new book is attempted by the pupil.

When it is determined by the CLEAR-RR teacher, in consultation with the classroom teacher and the Reading Department team leaders, that a pupil has made sufficient progress to work in the normal classroom setting without individual help, the pupil is recommended to be discontinued. Discontinued pupils are defined as those who have successfully completed the program according to the predetermined levels on diagnostic measures and have been released from the program. Other pupils from the waiting list enter the program when pupils are discontinued or move from the school.

Evaluation Design

As of the second year of the project, no specific evaluation objectives had been determined. An evaluation design was developed based on two goals identified from the 1984-85 proposal:

1. To develop and provide the CLEAR-RR Program for first-grade pupils.

   The individual child who has been identified as being "at risk" of failure has recovered essential reading strategies and can function satisfactorily in the regular classroom.

2. To adapt and apply the necessary inservice program for teachers.

   To implement the Reading Recovery techniques, teachers will receive intensive training over the period of a year while simultaneously implementing the program with children through clinical and peer-critiquing experiences guided by a skilled instructor.

Based on these two goals, evaluation questions regarding the CLEAR-RR Program were developed. The questions are as follows:

Question 1 What are the performance levels of pupils discontinued or with 60 or more lessons on a standardized test of reading?

Analysis 1.1	Number and percent of pupils reaching the 50%ile on the Total Reading and Reading Comprehension Scores on the CTBS.
Analysis 1.2	Number and percent of pupils reaching the 37%ile on the Total Reading and Reading Comprehension Scores on the CTBS.
Analysis 1.3	Number and percent of pupils reaching the average NCE for their room (schoolwide classrooms only) on the Total Reading and Reading Comprehension Scores on the CTBS.
Analysis 1.4	Mean or median change in %ile or NCE rank.

Question 2 What were the pretest and posttest levels of performance of pupils on the six diagnostic measures employed in CLEAR-RR?

Analysis 2.1	Descriptive data (mean, median, s.d.) on pretest and posttest.
Analysis 2.2	Comparison of text reading levels of pupils pre and post using appropriate non parametric statistics.

Question 3 How do CLEAR-RR pupils compare to pupils in other compensatory programs meeting attendance criteria?

Analysis 3.1 Number and percent reaching the 37%ile on the CTBS at posttest time.

Analysis 3.2 Comparison of distribution of posttest CTBS scores using the Kolmogorov-Smirnov statistic.

Analysis 3.3 Comparison of text reading levels with pupils in the Instructional Aide sample.

Question 4 What were the costs of CLEAR-RR compared to other compensatory programs?

Analysis 4.1 Cost per pupil of each program.

Analysis 4.2 NCE gain in reading for each program.

Analysis 4.3 Cost of gain of 1.0 NCE point for each program.

Question 5 What are the long term effects of CLEAR-RR?

Analysis 5.1 Number and percent of pupils served by CLEAR-RR in 1985-86 who attended a school where a compensatory program was available and who were served by a compensatory program in 1986-87.

Analysis 5.2 Number and percent of students served by Reading Recovery in 1985-86 who followed a normal grade level progression.

Question 6 What are the service patterns of CLEAR-RR?

Analysis 6.1 Number of pupils selected for the program who were not served.

Analysis 6.2 Number of pupils who were served.

Analysis 6.3 Number of pupils who were discontinued.

Analysis 6.4 Demographic characteristics of pupils who were served.

Analysis 6.5 Demographic characteristics of pupils who were discontinued.

The evaluation design provided for the collection of data in the following seven areas of operation for the overall program.

1. The September Information Form lists all pupils who were given the diagnostic tests at the beginning of the school year. Pupils most in need of CLEAR-RR services were selected from this list by Reading Department Personnel.

2. The Reading Recovery Pupil Test Roster lists all pupils who were to be selected for service during the 1985-86 school year and were to be given the CTBS pretest in October 1985. Additional pupils were placed on the list to be served in the event that extra openings became available.

3. The CLEAR-Reading Recovery Service Form is completed by each CLEAR-RR teacher upon official entry of each pupil into the program.

4. The CLEAR-Reading Recovery Data Form is used by program teachers to keep enrollment/attendance data for each pupil served as well as diagnostic and service patterns.

5. The CLEAR-Reading Recovery Posttest Roster is a computer printout sent to CLEAR-RR teachers to verify which pupils would take the CTBS posttest in April 1986.

6. The May Information Form is a computer printout listing of all pupils who were to receive the battery of diagnostic tests similar to those administered at the beginning of the year.

7. The Comprehensive Tests of Basic Skills (CTBS, 1981) was used as the pretest and posttest for all pupils in CLEAR-RR. This test series has empirical norms for fall and spring, established October 6 - 10, 1980, and April 27 to May 1, 1981. The description of the CTBS pretest and posttest is as follows:

	Level	Form	Recommended Grade Range	Subtests	Number of Items
Pretest	B	U	K.6-1.6	Vocabulary	17
				Oral Comprehension	15
				Total Reading	32
Postest	C	U	1.0-1.9	Vocabulary	25
				Reading Comprehension	25
				Total Reading	50

The CTBS tests were administered by program teachers except in schools where schoolwide testing occurred. Pretesting occurred September 30 through October 4, 1985. Posttesting occurred April 21-30, 1986. All testing was done on-level, as indicated in the table above.

Major Findings

Question 1 What are the performance levels of pupils discontinued or with 60 or more instructional lessons on a standardized test of reading? (Discontinued pupils are defined as those who have successfully completed the program according to predetermined levels on diagnostic measures and have been released from the program.)

Analysis 1.1 Number and percent of pupils reaching the 50%ile on the Total Reading and Reading Comprehension Scores on the CTBS.

Analysis 1.2 Number and percent of pupils reaching the 37%ile on the Total Reading and Reading Comprehension Scores on the CTBS.

Analysis 1.3 Number and percent of pupils reaching the average NCE for their room (schoolwide classrooms only) on the Total Reading and Reading Comprehension Scores on the CTBS.

Analysis 1.4 Mean or median change in %ile or NCE rank.

The evaluation sample for the standardized test data results was limited to those pupils who had both pretest and posttest administrations of the standardized achievement test and were either discontinued or had a minimum of 60 lessons. The use of the 60 lesson criterion was based upon the premise in Clay's study which determined that an average of 60 lessons was needed for pupils to be discontinued and continue to work successfully in the normal classroom setting. Of the 224 pupils served, an insufficient number of lessons or missing test data reduced the sample to 141 pupils which was 62.9% of all pupils served. Data from standardized testing are presented in Tables 1 and 2.

The results of Analysis 1.1 and 1.2 done with the evaluation sample data showed that for Reading Comprehension 22.7% of the pupils scored at grade level on the posttest and 39.0% scored above the 36%ile. For Total Reading, 19.9% of the pupils scored at grade level on the posttest and 39.0% scored above the 36%ile. An examination of pretest scores revealed that 27 of the 141 pupils had scored above the 36%ile (Chapter 1 eligibility cutoff score) and 15 had actually scored at or above grade level on the pretest. Therefore an analysis was done with just the pupils who had Total Reading pretest scores below the 37%ile. The analysis showed that of the 114 pupils 75 (65.8%) had posttest scores below the 37%ile on Total Reading.

The results of Analysis 1.3 are as follows. In the five CLEAR-RR schools where schoolwide testing occurred, 1597 first-grade pupils were tested in April 1986. The mean NCE for Reading Comprehension was 44.6, and for Total Reading it was 43.6. The number of CLEAR-RR pupils from the evaluation sample who reached or exceeded the average NCE for their classroom in Reading Comprehension was 19 of 51 pupils or 37.3%. In Total Reading 20 of 51 or 39.2% reached or exceeded the average NCE for their classroom.

Because certain pupils were in the sample by virtue of the fact that they were discontinued or had their 60 lessons after the posttest was administered, an analysis was made of certain subgroups of the evaluation sample. The results of Analysis 1.4 are found in Table 3. The pupils who made the highest gains of 18.9 NCE points were those 49 pupils who were discontinued by the time the posttest was administered. The second highest gain of 16.5 NCE's was made by the 73 discontinued pupils who were below the 37th percentile on the pretest. All subgroups made higher gains than did the total evaluation sample including those 100 pupils discontinued or with 60 lessons by posttest time with a gain of 10.8 NCE's.

Question 2 What were the pretest and posttest levels of performance of pupils on the six diagnostic measures employed in Reading Recovery?

Analysis 2.1 Descriptive data (mean, median, s.d.) on pretest and posttest.

Analysis 2.2 Comparison of text reading levels of pupils pre and post using appropriate non parametric statistics.

Table 1
CLEAR-Reading Recovery, 1985-86
Minimum, Maximum, Average, and Standard Deviation of the
Pretest and Posttest Normal Curve Equivalents (NCE)
for Comprehension and Total Reading
N=141

	Pretest				Posttest				Change	
Subtest	Min.	Max.	Mean NCE	Standard Deviation	Min.	Max.	Mean NCE	Standard Deviation	Average NCE	Standard Deviation
Oral Comprehension (Fall only)	9	82	30.6	16.2						
Reading Comprehension (Spring only)					1	86	37.6	17.1		
Total Reading	1	81	28.0	16.1	1	78	36.5	16.0	8.5	17.8

Table 2

CLEAR-Reading Recovery, 1985-86

Minimum, Maximum, Median, and Quartile Deviation

of Pretest and Posttest Percentiles for Oral and Reading Comprehension and Total Reading

N=141

	Pretest				Posttest			
Subtest	Minimum	Maximum	Median Percentile	Quartile Deviation	Minimum	Maximum	Median Percentile	Quartile Deviation
Oral Comprehension (Fall only)	3	94	16	9.0				
Reading Comprehension (Spring only)					1	96	30	17.0
Total Reading	1	93	16	10.0	1	91	28	16.5

Table 3

CLEAR-Reading Recovery, 1985-86
Average and Standard Deviations of the Pretest and Posttest
Normal Curve Equivalents (NCE) for Total Reading of Subgroups

		Pretest			Posttest			Change	
Subgroup	N	Median %ile	Average NCE	Standard Deviation	Median %ile	Average NCE	Standard Deviation	Average NCE	Standard Deviation
Discontinued by Posttest Time	49	19	30.2	14.8	47	49.1	10.3	18.9	14.8
Discontinued or 60 Lessons by Posttest Time	100	14	26.8	16.2	30	37.6	16.3	10.8	17.5
Discontinued or 60 Lessons by Posttest Time <37% on Pretest	83	11	21.9	12.4	28	35.7	16.3	13.9	16.6
Discontinued or 60 Lessons <37% on Pretest	114	11	22.3	11.8	25.5	34.4	15.8	12.1	16.7
Discontinued <37% on Pretest	73	13	24.8	10.1	38	41.4	13.3	16.5	15.6
Discontinued	98	19	31.8	15.3	41	42.9	13.1	11.1	17.5

Five diagnostic instruments adapted from Clay's Diagnostic Survey and a sixth one measuring text reading levels were administered in September and May to all pupils in CLEAR-RR. Pupils were assessed in their ability to (a) identify 54 upper and lower case letters, (b) read a list of 15 basal words, (c) perform tasks related to 24 concepts about print, (d) write all the words they knew in 10 minutes, (e) write the words in a dictated sentence comprised of 37 sounds, and (f) read successive levels of texts to determine the highest level of success which was designated as text read with 90% accuracy or above. The highest or 26th level was equated to the sixth grade reading level in the basal reading series used by the school district. A summary of the data from the pretest and posttest of the diagnostic measures is presented in Table 4.

The data indicated that a sample of 144 pupils discontinued or with 60 or more lessons made substantial gains in all measures and approached the maximum possible scores in two measures, namely Letter Identification and Word Test. In Letter Identification the average pretest-to-posttest scores were 34.87 and 51.56, an increase in 16.69 letters. On the Word Test the average pretest-to-posttest scores were 2.02 and 13.24, an increase in 11.22 words. In Concepts About Print the average pretest-to-posttest scores were 7.31 and 16.05, an increase in 8.74 concepts. In Writing Vocabulary the average pretest-to-posttest scores were 2.96 and 33.25, an increase in 30.29 words. In Dictation the average pretest-to-posttest scores were 5.24 and 30.16, an increase in 24.92 sounds. In Text Reading the average pretest-to-posttest scores were 1.77 and 9.53, an increase in 7.76 levels. According to the results of the Wilcoxon Matched-Pairs Signed-Ranks Test, the CLEAR-RR pupils had statistically higher ($p<.001$) Text Reading levels on the posttest.

Question 3. How do CLEAR-RR pupils compare to pupils in other compensatory programs meeting attendance criteria?

Analysis 3.1 Number and percent reaching the 37%ile on the CTBS at posttest time.

Analysis 3.2 Comparison of distribution of posttest CTBS scores using the Kolmogorov-Smirnov statistic.

Analysis 3.3 Comparison of text reading levels with pupils in the Instructional Aide sample.

A comparison was made among the sample of 141 CLEAR-RR pupils, a regular CLEAR sample of 147 first-grade pupils, and an Instructional Aide Program sample of 1185 first-grade pupils. Test data regarding the three programs are found in Table 5.

Numerous differences can be cited among the three groups. For example, the CLEAR-RR sample pupils were discontinued or had 60 or more lessons, the regular CLEAR group attended 108 or more program days, and the Instructional Aide sample group attended 118 or more program days. Instruction for CLEAR-RR was one to one, whereas small group instruction of 10-12 pupils occurred in the other programs. The pretest median percentile and mean NCE scores were lower for CLEAR-RR than the other two groups. At posttest time the CLEAR-RR group surpassed the Instructional Aide group but not the regular CLEAR group on the median percentile and mean NCE scores. CLEAR-RR pupils made substantially greater average gains of 8.5 NCE points in comparison to the regular CLEAR's gain of 2.6 NCE points and the Instructional Aide group's gain of 0.2 NCE points. The percentage of pupils making substantial improvement for CLEAR-RR

Table 4
CLEAR-Reading Recovery, 1985-86
Average Pretest and Posttest Levels, Standard Deviations,
and Average Change Scores on the
Diagnostic Survey
N=144

Diagnostic Measure	Pretest					Posttest					Change	
	Min.	Max.	Med.	Mean	S.D.	Min.	Max.	Med.	Mean	S.D.	Mean	S.D.
Letter Identification (Max. 54 letters)	0	54	39	34.87	15.01	23	54	52	51.56	3.89	16.69	13.64
Word Test (Max. 15 words)	0	14	2	2.02	2.23	2	15	14	13.24	2.45	11.22	2.72
Concepts About Print (Max. 24 concepts)	0	21	7	7.31	3.75	5	22	16	16.05	2.90	8.74	3.78
Writing Vocabulary (Max. Words in 10 Minutes)	0	18	2	2.96	2.87	5	69	32	33.25	13.64	30.29	13.00
Dictation (Max. 37 sounds)	0	27	4	5.24	5.82	9	37	32	30.16	6.78	24.92	6.95
Text Reading (Max. 26 levels)	1	4	2	1.77	0.85	3	26	10	9.53	3.28	7.76	3.23

Table 5

Comparison of CLEAR-Reading Recovery Pupils with First-Grade Pupils in Regular CLEAR and the Instructional Aide Program on Total Reading, 1985-86

Program	Total N	Pretest Median %ile (Q.D.)	Pretest Mean NCE (S.D.)	Posttest Median %ile (Q.D.)	Posttest Mean NCE (S.D.)	Average NCE Change	No[a] Improvement N (% of Total)	Some[a] Improvement N (% of Total)	Substantial[a] Improvement N (% of Total)	Pupils at or abcve 37% at Posttest N (% of Total)
CLEAR-RR	141	16.0 (10.0)	28.0 (16.1)	28.0 (16.5)	36.5 (16.6)	8.5	45 (31.9%)	14 (9.9%)	82 (58.2%)	55 (39.0%)
CLEAR	147	34.9 (19.0)	31.7 (16.3)	41.3 (17.0)	44.3 (14.3)	2.6	57 (38.8%)	31 (21.1%)	59 (40.1%)	85 (57.8%)
Instructional Aide	1185	21.9 (13.5)	33.5 (15.1)	22.5 (15.5)	33.7 (16.7)	0.2	606 (51.1%)	161 (13.6%)	418 (35.3%)	352 (29.7%)

[a]No Improvement = 0 or less NCE gain
Some Improvement = 1 to 6 NCE gain
Substantial Improvement = 7 or more NCE gain

was also much higher than the other two groups respectively (58.2%, 40.1%, 35.3%). At posttest time the percentages of CLEAR-RR pupils no longer eligible for Chapter 1 because of placing at or above the 37th percentile fell between the other two groups respectively (39.0%, 57.8%, and 29.7%).

Because pupil selection criteria were to result in extreme groups of pupils being selected for the various compensatory programs that serve first-grade pupils, there was some interest in determining the characteristics of the distributions of pretest, posttest and change scores. Analysis 3.2 was carried out by means of the Kolmogorov-Smirnov goodness of fit test and graphic displays which indicated that the CTBS distributions were essentially normal for CLEAR-RR, public school CLEAR and the Instructional Aide Program.

An examination of the pretest NCE scores for CTBS Total Reading indicated that the groups were dissimilar at the start of the project year. The average pretest NCE score for CLEAR-RR was 28.0, while the average pretest score for public school CLEAR was 43.4. The comparable figure for the Instructional Aide Program was 33.5. The posttest scores indicated that the CLEAR-RR and public school CLEAR groups were also dissimilar at the end of the project year. The average NCE score for pupils in the public school CLEAR group was 44.3 and the average NCE for the CLEAR-RR group had increased to 36.5. The comparable figure for the Instructional Aide Program was 33.7.

Analysis 3.3 provided a comparison of the performance of two groups of pupils on Text Reading. Group 1 was composed of 144 CLEAR-RR pupils who were discontinued or had 60 or more lessons, and had both a pretest and a posttest Text Reading score. Group 2 was composed of 44 pupils in the Instructional Aide evaluation sample who had both a pretest and a posttest Text Reading score. The analysis showed that CLEAR-RR pupils scored significantly lower ($p<.01$) on the pretest than Aide pupils with average scores of 1.8 and 2.3 respectively. On the posttest, however, the CLEAR-RR pupils scored significantly higher ($p<.01$) than the Aides pupils with average scores of 9.5 and 7.6 respectively. On the average the CLEAR-RR pupils gained 7.8 Text Reading levels and the Aides pupils gained an average of 5.3 Text Reading levels.

Question 4 What were the costs of CLEAR-RR compared to other compensatory programs?

Analysis 4.1 Cost per pupil of each program.

Analysis 4.2 NCE gain in reading for each program.

Analysis 4.3 Cost of gain of 1.0 NCE point for each program.

A cost-benefit analysis was prepared in order to compare the three programs serving first-grade pupils (CLEAR-RR, regular CLEAR, and Instructional Aide). The results are given in Table 6. The subgroup of first-grade regular CLEAR pupils was redefined to include only public school pupils, which changed the number of sample pupils from 147 to 103. Non-public school pupils were eliminated from this sample for greater comparability of groups and for congruence with other cost-benefit studies previously used in Columbus Public Schools Chapter 1 Programs. When the three groups of pupils were compared and found to be dissimilar at pretest time in terms of NCE scores, a further subgroup of pupils who scored at or below the 36th percentile was analyzed. This analysis was performed in order to compare subgroups who were all Chapter 1

Table 6

Cost-Benefit Analysis for First-Grade Public School Pupils in Chapter 1 CLEAR Reading Recovery, Chapter 1 Regular CLEAR, and the DPPF First-Grade Instructional Aide Program

Program	Number of FTE Teachers/Aides	Program Cost[a] Total	Per FTE	Pupils in Program Served	In Sample	Pupils per FTE Served	In Sample	Cost per Pupil Served	In Sample	Ratio of Sample to Pupils Served	Average NCE Gain	Cost/NCE Point Gained
CLEAR-RR	16.0	$581,978	$36,374	224	141	14.0	8.8	$2,598	$4,128	62.9%	8.5	$485
CLEAR-RR (Pupils <37%ile on Pretest)					114				4,128		12.1	342
Regular CLEAR	2.8	101,846[b]	36,374	147	103	52.5	36.8	693	989	70.1	0.9	1,061
Regular CLEAR (Pupils <37%ile on Pretest)					49				989		7.1	140
Instr. Aide	100.5	1,113,505[c]	11,080	1,897	1,185	18.9	11.8	587	940	62.5	0.2	4,508
Instr. Aide (Pupils <37%ile on Pretest)					871				940		3.6	262

Note. The pupils in the evaluation samples varied considerably across the three programs in terms of their pretest CTBS Total Reading scores. The analysis of only pupils scoring below the 37%ile was included in an attempt to show program results on more similar groups of pupils.

[a] Cost figures include only teacher/aide costs.

[b] Figures are based on the proportion of pupils served at each grade level.

[c] Cost is based on maximum salary plus fringe benefits for aides.

eligible according to the pretest. The resulting subgroups numbered 114 for CLEAR-RR, 49 for public regular CLEAR and 871 for the Instructional Aide Program. The data indicated tha the cost per pupil in the evaluation sample was $4,128 for CLEAR-RR, $989 for regular CLEAR, and $940 for the Instructional Aide Program. The NCE gain in reading for the subgroups was 12.1, 7.1, and 3.6 respectively. The cost of the gain of 1 NCE point was $342 for CLEAR-RR, $140 for regular CLEAR, and $262 for the Instructional Aide group.

Question 5 What are the long term effects of the CLEAR-RR Program?

Analysis 5.1 Number and percent of pupils served by CLEAR-RR in 1985-86 who attended a school where a compensatory program was available and who were served by a compensatory program in 1986-87.

Analysis 5.2 Number and percent of students served by Reading Recovery in 1985-86 who followed a normal grade level progression.

Data from early February 1987 indicated that, of the 155 pupils discontinued or with 60 or more lessons, 67 were in a school and at a grade level where a compensatory program was serving other pupils. Of the 67 pupils, 20 (29.9%) were served in a compensatory program at that school. Three additional pupils were served by a compensatory program at another school. Of the 23 pupils, 17 were served as second-graders by the CLEAR program and six were served as first-graders by the Instructional Aide Program. Also, the Student Master File showed that of the sample of 155 pupils, 40 (25.8%) were still in first grade.

Question 6 What are the service patterns of CLEAR-RR?

Analysis 6.1 Number of pupils selected for the program who were not served.

Analysis 6.2 Number of pupils who were served.

Analysis 6.3 Number of pupils who were discontinued.

Analysis 6.4 Demographic characteristics of pupils who were served.

Analysis 6.5 Demographic characteristics of pupils who were discontinued.

A total of 224 first-grade pupils was served in CLEAR-RR during the 1985-86 school year for an average of 2.5 hours of instruction per week. The total number of boys and girls served was 136 and 88 respectively. The total number of pupils on free or reduced price lunch was 187, while 37 pupils were not receiving a subsidized lunch. The total number of blacks served was 117 while the total number of non-blacks served was 107. The average daily membership in the overall program was 125.4 pupils. The average days of enrollment per pupil was 89.0 days and the average attendance was 70.9 days. The average number of lessons per pupil was 60.6. The average number of pupils served per teacher during the school year by the 16 full-time equivalent teachers was 14.0.

Of the 104 discontinued pupils, 66 were male and 38 were female; 86 were on the free and reduced lunch plan while 18 were not; and finally, 51 were black and 53 were non black.

Of 224 pupils served in the CLEAR-RR Program, 104 were considered discontinued based upon the combined judgment of the CLEAR-RR teachers and the Reading Department teacher leaders who thoroughly analyzed all pupils' diagnostic records plus their performance in the classroom. Of the 104 discontinued pupils, 58 were officially discontinued during the school year, and 46 were discontinued by the teacher leaders at the end of the year although they had not yet been recommended for discontinuing by their CLEAR-RR teachers. Of the 224 pupils who were served, the breakdown of discontinued pupils and those pupils not discontinued by number of lessons is shown in Table 7.

One of the concerns of the program planners is how long to serve pupils who appear to make little progress after a large number of lessons. The average number of lessons for the 104 discontinued pupils is 66.4 while the average number of lessons for the 120 non-discontinued pupils is 55.6. It has been determined that approximately 60 lessons are necessary for most pupils to successfully complete the program. Therefore, an analysis was made of all pupils who completed 60 or more lessons. The data indicated that of the 112 pupils who had 60 or more lessons, 61 were discontinued and 51 were not discontinued.

In September, 1985 a total of 285 first-grade pupils were designated to be served in the CLEAR-RR Program at some time during the year. As pupils were discontinued or left the program for other reasons, new pupils were added. Table 8 indicates the numbers of pupils not served and the reasons why.

The largest number of pupils not served were the emergency pupils, so designated because they were in the classroom of the CLEAR-RR teacher team, were at a slightly higher level than the first eight or nine pupils to be served from that classroom, and would only receive service in the beginning of the year if a pupil from their classroom left the program before pupils were served from other classrooms. Of these 33 children, several also fit into other categories as illustrated in the table. Of all categories listed, only two children from the original list were still waiting to be served at the end of the year. Undoubtedly, other pupils would have benefited from being in the program had there been openings available. It is interesting to note that eight pupils made enough progress during the year that by the time the CLEAR-RR teacher could begin serving them, they no longer needed special help.

Another report including data for CLEAR-Reading Recovery has been published by The Ohio State University (Pinnell, Short, Lyons, & Young, 1986). Some data concerning subgroups of pupils are slightly different due to the condition that the sample n's from the two reports were obtained in somewhat different ways, although the data shared by both institutions were essentially the same. The reader should be advised that there has not been any intent to mislead the public.

Table 7

Pupils Served by CLEAR Reading Recovery
N=224

Number of Lessons	Discontinued Pupils Number of Pupils	Non Discontinued Pupils Number of Pupils
1-9	2	12
10-19	2	17
20-29	12	12
30-39	8	13
40-49	7	7
50-59	12	8
Subtotal	(43)	(69)
60-69	13	9
70-79	11	4
80-89	13	8
90-99	10	7
100-109	5	9
110-119	4	8
120-129	5	5
130	0	1
Subtotal	(61)	(51)
Total	104	120

Table 8

CLEAR-Reading Recovery Pupils Not Served
N=66

Reason Not Served	Number
Emergency Pupils	33 a, b, c
Moved Out of the System	13 a
Transferred to Other Columbus Schools	10 b, d, e
Too High For Service	8
Served in Instructional Aide Program	3 e
Placed in Special Education Classes	3 c
Waiting to Be Served	2
Placed in Kindergarten	2 d
First-Grade Repeater	1

a. Three Emergency pupils moved out of the system.

b. Two Emergency pupils moved to other Columbus Schools.

c. One Emergency pupil was placed in a Special Education Class.

d. One pupil transferred to another Columbus school and was placed in kindergarten.

e. Two pupils transferred to other Columbus schools and were served in the Instructional Aide Program.

Summary/Recommendations

Of 285 pupils selected to be served in CLEAR-RR, 224 were served in the program in 12 schools during the 1985-86 school year. They were served by 30 teachers with a full-time equivalent of 16. The average number of instructional lessons was 60.6. Of the total served, 104 were discontinued and an additional 51 had 60 or more lessons.

The evaluation sample consisted of 141 pupils who met the criteria of being discontinued or having 60 or more lessons and who received the CTBS pretest and posttest. Analysis of pretest-posttest achievement data indicated that the evaluation sample of 141 pupils made an average gain of 8.5 NCE points for the treatment period. The 98 discontinued pupils for whom test scores were available had an average gain of 11.1 NCE points. The number and percent of pupils who were at various percentile levels in Total Reading on the posttest are as follows: (a) 28 or 19.9% were at the 50%ile or above (grade level); and (b) 86 or 61.0% were at the 36%ile or below (Chapter 1 eligible). Further, of the 51 pupils on whom comparable CTBS posttest data were available, only 39.2% (20) scored at their homeroom average on Total Reading.

On the Reading Recovery Diagnostic Survey, the following mean scores were obtained for September and May from a sample of 144 CLEAR-RR pupils who were discontinued or had 60 or more instructional lessons: Letter Identification, 34.87 to 51.56; Word Test, 2.02 to 13.24; Concepts About Print, 7.31 to 16.05; Writing Vocabulary, 2.96 to 33.25; Dictation, 5.24 to 30.16; Text Reading Level, 1.77 to 9.53.

CLEAR-RR pupils compared favorably to other programs serving first-grade pupils in regard to NCE growth. While the average gain for CLEAR-RR was 8.5 NCE's, regular CLEAR pupils averaged 0.9 NCE's and those in the Instructional Aide Program averaged 0.2 NCE's. However, a cost-benefit analysis of subgroups of pupils who scored below the 37th percentile on the pretest, indicated that the cost per NCE point gain was $342 for CLEAR-RR, $140 for regular first-grade CLEAR, and $262 for first grade Instructional Aide pupils.

Data regarding long term effects from early February 1987 indicated that of the 155 pupils who were discontinued or had 60 lessons or more, 40 (25.8%) were retained in first grade. Also, of the 155 pupils, 67 were in a school and at a grade level where a compensatory program was serving other pupils. Of the 67 pupils, 20 (29.9%) were served in a compensatory program at that school.

This report contains a considerable amount of data that compares CLEAR-RR with other compensatory education programs. The comparative data vary based on the particular question that was being addressed. (Since groups were dissimilar at pretest time, some caution should be used in interpreting the results.) Table 9 represents an attempt to summarize the comparative data. It contains only data for public school pupils. The data in the table show that CLEAR-RR pupils did make substantial gains in reading as measured by the CTBS test. However, the program is very costly in terms of pupils served and NCE gain. This is a serious problem given the large number of Chapter 1 eligible

Table 9

Comparison of Cost, CTBS Total Reading Achievement, and Retention of First-Grade Public School Pupils in the Evaluation Samples of 1985-86 Compensatory Education Programs

Program	No. of Pupils	% Chapter 1 Eligible 4/86	% at Grade Level 4/86	Avg. NCE on Pretest	Avg. NCE on Posttest	Avg. NCE Gain	Cost/Pupil in Sample	Cost/Pupil NCE Point Gained	% Retained in 1986-87	% of Retained Placed in DH by 2/87
CLEAR-RR	141	61.0	19.9	28.0	36.5	8.5	4,128	485	25.5%	5.6%
Regular CLEAR	103	42.7	38.8	43.4	44.3	0.9	989	1,061	23.3	0.0
Inst. Aide	1185	70.3	17.0	33.5	33.7	0.2	940	4,508	26.9	1.3
CLEAR-RR (Pupils <37%ile on pretest)	114	65.8	14.9	22.3	34.4	12.1	4,128	342	30.7	5.7
Regular CLEAR (Pupils <37%ile on Pretest)	49	65.3	20.4	30.5	37.5	7.1	989	140	32.7	0.0
Inst. Aide (Pupils <37%ile on Pretest)	871	76.7	12.1	26.9	30.4	3.6	940	262	33.2	1.4

Note. The pupils in the evaluation samples varied considerably across the three programs in terms of their pretest CTBS Total Reading scores. The analysis of pupils scoring below the 37%ile was included in an attempt to show program results on more similar groups of pupils.

pupils and the limited funds that are available to serve them. Adding to this problem is the relatively large number of CLEAR-RR pupils who are retained in grade and who need additional services the following year. The last column in the table indicates that few of the retained pupils were placed in a program for the Developmentally Handicapped.

It is recommended that the CLEAR-Reading Recovery program be continued during the 1987-88 school year, with special consideration given to the following:

1. Due to the comparative high cost of the program, funding should remain at the current level until a higher percentage of pupils can be discontinued from the program, not be retained in grade, and not need further compensatory education services.

2. The successful teaching strategies used by CLEAR-RR teachers during intensive university training and follow-up inservice and the resulting development of successful pupil strategies should be shared with other teachers in the Department of Federal and State Programs.

3. The possibility of providing service to more pupils should be investigated. It is possible that, as teachers become better trained, they will be able to accelerate the progress of pupils to the extent that they can be discontinued earlier so that others will have an opportunity to be served. As the program exists now, too many are in the program for almost the entire year.

4. The problem of high retention rate in grade 1 needs to be explored. If classroom teachers are retaining pupils who have made dramatic improvement at the end of the year, perhaps closer communication between principals, CLEAR-RR personnel, and other staff members would result in a clearer understanding of the level of success of CLEAR-RR pupils. If, however, large percentages of pupils continue to qualify for Chapter 1 programs, earlier identification of pupils who may be eligible for special education services may be in order.

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