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ABSTRACT

The major goal of the reading program was to take children who were severely disabled readers and bring them to the third grade level over the course of eight weeks of intensive instruction. There were three basic components of the program: (1) Talking Typewriters (each child spent about twenty minutes each day on the Talking Typewriter); (2) tutoring by teacher aides; and (3) homework, which involved use of the Talking Page and the Voice Mirror. Seventeen fourth grade students, nine fifth grade students, and two sixth grade students were selected for the program. The students were pretested with the Stanford Achievement Test. Those who scored below 2.0 on the Stanford were recommended for informal testing. The same two tests were given as posttests either upon the completion of the program or at the end of the period of time when the children were no longer able to participate because of summer vacation. The statistical results indicated that the program did not bring each participating child up to the third grade level. Twenty-five children did not make substantial progress on either the formal or the informal tests. It was recommended that further tests of the reading program be conducted outside the Minneapolis public schools. (Author/WR)

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Minneapolis Public Schools

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Evaluation of a Reading Program for
Severely Retarded Readers
Spring 1971

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Ideas expressed in this report do not necessarily reflect the official position of the Minneapolis Public School Administration nor the Minneapolis School Board.

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Spring 1971

Summary

The Reading Program was designed to take children who were severely disabled readers or nonreaders and advance them to the third grade reading level after eight weeks of intensive instruction involving the use of Talking Typewriters, Talking Pages, Voice Mirrors, parent cooperation and tutoring by teacher aides.

An evaluation of program results clearly indicated that the children involved in the program were those for whom it was designated. However, the program did not accomplish its major goal of bringing each child up to the third grade level. Recommendation was made that this approach to teaching reading should be tested under more controlled conditions, preferably in another school system. Most students didn't really complete the entire program; this may not have been a fair test of the program.

It should be noted that this program was not related to the Minneapolis Basic Skill Centers program which also uses the Talking Typewriters.

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Department

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Minneapolis Public Schools
Evaluation of a Reading Program for
Severely Retarded Readers
Spring 1971

On April 2, 1971 Minneapolis School officials were approached by Mr. Richard Kobler of the Responsive Environment Corporation (REC) with an idea for improving the teaching of reading. It was claimed that within a relatively short time children could reach the third grade level in reading, regardless of their starting point.

Following brief but rather intensive discussions a decision was made to give the proposed program a tryout. Minneapolis personnel had already had considerable experience with one basic component of the proposed program - The Talking Typewriter. Additionally, children to be involved in the tryout were so far behind their classmates that it was felt that only good could result from their participation.

For these reasons, but mainly because there was hope that this new approach would reach children that other approaches had not reached, a go-ahead was given on April 5, 1971.

Locally, the program became known as the Kobler Reading Program. (This program was not related to the Minneapolis Basic Skill Centers program, which also uses the REC Talking Typewriters. Positive reading gains for severely disabled readers have been demonstrated through the Basic Skill Centers' approach.

Description of the Program

The Reading Program was designed to take children who were severely disabled readers or nonreaders and advance them to the third grade reading level after eight weeks of intensive instruction. The program consisted of exposure to the Kobler Reading Program, along with assistance from teacher and aides. Children were given a Talking Page and a Voice Mirror to use in their homes. Parents were asked to see that the children spent from 30 to 45 minutes each night on homework and were given directions of how to use the equipment.

Basically there were three components to the program. First, was the Talking Typewriters. Each child spent about 20 minutes each day on the Talking Typewriter. The second component was tutoring by teacher aides. The third component was homework, which involved use of the Talking Page and the Voice Mirror.^a

Objective of the Program

The major goal of the Reading Program was to take children who were severely disabled readers and bring them to the third grade level over the course of eight weeks of intensive instruction. Specifically, each child, upon completion of the program would read at the third grade level, assuming he were not brain damaged nor mentally retarded. (At times, initial discussions had referred to reaching the 3.5 grade equivalent

^aTalking Typewriter: A special typewriter, with audio components, exhibitors, and an automatic projection unit combined by a computer to present a programmed system which provides sight, touch and sound inputs.

Talking Page: A series of booklets and records which present phonic principles of beginning reading.

Voice Mirror: A cassette recorder with instant automatic playback.

level, but this use was not consistent. It is definite, however, that a minimum of the third grade level was the goal for each child in this program).

No specification was made as to which tests were to be used to define the third grade reading level. No specification of student selection procedures for the project were made by program proponents other than that the children be disabled readers, but not brain damaged nor mentally retarded. It was implied that the reading program would be applicable to a wide variety of children with reading disabilities. Unfortunately, there was no clear understanding of what was meant by "the program." Initially, Minneapolis school personnel understood that the program would be completed when a child finished the forty-five lessons on the Talking Typewriter Program. Later, program proponents indicated that the program would not be completed until forty hours of instruction were finished. This lack of understanding is a crucial point since one of the claims made by Kobler Program representatives was that the program could be expected to result in relatively slow initial learning with positively accelerated growth toward the end of the program.

Selection of Students

The number of students in the program was limited to 30 because of cost and other practical considerations. Two schools were selected by the Minneapolis School administration for involvement. These selections were based on availability of space and the availability of the students in these schools for this kind of program.

Initially grades 4, 5 and 6 were to be involved. Students in these three grades who were referred by their teachers were tested with the Stanford Reading Achievement Test Form W, as a rough screen for selection purposes. All students who were at grade 2.0 or lower were given consideration for the program.

Teachers at School A made referrals from grades 4, 5 and 6. On April 21, 25 students were tested but none of them were found to meet the criteria for selection. All students topped the Primary I test. A second group of students at this school was then tested with Primary II and again none of the students were found to meet the selection criteria. It was then decided to test students at the third grade level. Paragraph Meaning and Word Reading sections of the Stanford were administered. Additional sections were not given since it was found that students were not making any correct responses or were getting very few items correct. In essence, these students were nonreaders.

Similar procedures were followed at School B where testing began on April 22 in grades 4, 5, and 6. Only one or two 4th, 5th and 6th graders met the criteria. On April 26 third grade students referred by teachers were tested and selections were made on the basis of low scores on the Stanford Achievement Test.

Following the selection of students on the formal reading tests, an informal reading test based on the American Book Company Reading series was administered by a nonschool consultant hired for this purpose. Students who scored in the second grade reader or above also were excluded from the program. One exclusion occurred at School A.

The final sample involved in this program included 17 fourth year students, 9 fifth year students and two sixth year students. Information

was not available for two students. Most of the students were placed at the third grade level (kindergarten plus three years) since some fifth and sixth year students had repeated one or two grades. Exact grade placements could not be made due to the nongraded program in School A. For all practical purposes, the students in this experimental program were third graders. All of these students had scored below 2.0 on paragraph meaning and all had scored below 2.3 on word reading on the Stanford Reading Achievement Test. None of the participating children had scored above level E on the informal reading tests and most of them were at the pre-primer level.

No records were kept of sex, race or other background characteristics although it appears, from the names, that 21 boys and 9 girls were initially involved.

Record file information indicated that 11 children were living in "normal" families and 16 were living in families broken by divorce, separation or death. No information was available on 3 children.

Test Administration

On the pretest, children were tested in groups of 5 on the Stanford Achievement Test. Information is lacking on testing procedures for students at School B.

Children who scored 2.0 or below on the Stanford were recommended for informal testing. The Informal Reading Inventory published by the Minneapolis' Instructional Materials Center was used. This test used vocabulary from the American Book Company Reading series (ABC), the series recently adopted for use throughout the inner city schools of Minneapolis.

The same two tests were given as posttests. The posttests were given either upon completion of the experimental program (i.e. completion of the 45 lessons) or at the end of the period of time when the children were no longer able to participate in the program because summer vacation had started. Some children were tested a third time since they had been tested upon school closing because of the uncertainty of their continuance in the program. Subsequently it was found that some of these children could continue with the program and they were then tested when they completed their 45th lesson or on July 26th, whichever came first.

Because of the limited exposure time, the program was extended to July 9th so that as many students as possible would have opportunity to complete the 45 lessons.

Length of the Program

The Program was designed to operate for 8 weeks. This design did not prove feasible due to the late date of agreement on conducting the experiment as well as to administrative and operational difficulties in getting the program started. Equipment had to be ordered and machinery installed. These problems delayed the start of the program so that the first child was not actually involved until April 27, 1971. Since school closed on June 12th, a complete eight week exposure would not have been possible without some revision in scheduling. An attempt was made to have children continue in the program even though school had closed and this attempt was successful in part. Nevertheless, the average number of days in attendance at the program was only 23.

Perhaps of more importance, at least as far as program proponents are concerned, is the number of hours of exposure to the program. None of the children in the program were exposed to the full 40 hours which

program proponents had hoped to see. Only two students had more than 30 hours exposure and two-thirds of the students had less than half the exposure time advocated by REC officials. Average (mean) exposure time was 17 hours and 58 minutes.

Despite the limited exposure time, a number of students did finish the 45 lessons. Possibly these completions reflected the emphasis of Minneapolis project administrators on lesson completion as opposed to amount of exposure time; an emphasis based on lack of communication as to what constituted a "completed program."

Eight of twenty-six students for whom this information was available completed the 45 lessons -- or were working on the last lesson. Another 4 had completed at least 40 hours.

About 7 of 26 had completed less than 1/2 the lessons (20 or under).

Results

Results clearly indicate that the children involved in the program were those for whom the program was designated, that is, they were severely disadvantaged readers since most of them were in third grade and were reading at a level about one and one-half grades below that level on the average. It is also obvious from Table 1, that the program did not accomplish its major goal of bringing each of these children up to the third grade level.

Standardized Test Results

The mean grade equivalent, based on raw scores, on the Stanford pretest was 1.6 in Word Reading for the children in the program. On the posttest, the mean grade equivalent was also 1.6. For Paragraph Meaning, the pretest grade equivalent was 1.5 and on the posttest the grade equivalent was 1.6.

Table 1 gives mean raw scores and estimated grade equivalents based on mean raw scores for Word Reading and Paragraph Meaning. In essence, the average child in this program was reading some place between the first and second grade level on the Stanford Achievement measure at the beginning of the program and was at about the same level at the end of the program, although some gain was evidenced in the average raw score.

Table 2 shows individual results for the two schools. School A students started at a lower level on both Paragraph Meaning and Word Reading. They made some gains in Paragraph Meaning but remained at approximately the same level on Word Reading. Students at School B lost ground on Paragraph Meaning and remained at approximately the same grade equivalent level on Word Reading. Actually, students at School B had a lower average raw score on the paragraph meaning and word reading post-test than they had on the pretests.

Table 3 shows the number of individual students who gained, lost, or stayed the same on the two sections of the Stanford Achievement Tests. Fifteen of the twenty-six students on whom pre- and post test measures were available on Word Reading showed gains while ten lost ground and one student stayed at exactly the same level. On Paragraph Meaning twelve students gained, eleven lost and two stayed the same. In essence, we have roughly the same number of students losing ground as we have making gains.

Four students were given a second posttest on Word Reading as they remained in the program longer than anticipated and thus had additional exposure. Six students, similarly, were given a second posttest on Paragraph Meaning following additional exposure to the program. Mean raw scores and grade equivalents did not change substantially when the

Table 1

Pre- and Posttest Mean Raw Scores and Grade Equivalents on the
Stanford Achievement Test
Form W, Primary I

	Word Reading N=26		Paragraph Meaning N=25	
	Raw Score	Grade Equivalent	Raw Score	Grade Equivalent
Pretest	16.88	1.6	10.96	1.5
First Posttest	17.31	1.6	12.52	1.6
Second ^a Posttest	18.54	1.7	12.88	1.6

^a

Four students were given a second posttest on Word Reading and six students were given a second posttest on Paragraph Meaning. At the time of the first posttest it was believed that these students would not continue with the program. Some practice effect may have occurred because of this additional testing.

Table 2

Pre- and Posttest Mean Raw Scores and Grade Equivalent (G.E.) on the Stanford Reading Achievement Test, Form W Primary I for Students in Two Project Schools

WORD READING	School A		School B	
	Mean <u>Raw Score</u>	<u>G.E.</u>	Mean <u>Raw Score</u>	<u>G.E.</u>
Pretest	14.31	1.5	19.46	1.7
Posttest 1	15.31	1.5	19.31	1.7
Posttest 2 ^a	16.15	1.6	20.92	1.8

PARAGRAPH MEANING	School A		School B	
	Mean <u>Raw Score</u>	<u>G.E.</u>	Mean <u>Raw Score</u>	<u>G.E.</u>
Pretest	5.54	1.3	16.83	1.7
Posttest 1	9.62	1.5	15.67	1.6
Posttest 2 ^a	10.54	1.5	15.42	1.6

^a Four students were given a second posttest on Word Reading and six students were given a second posttest on Paragraph Meaning. At the time of the first posttest it was believed that these students would not continue with the program. Some practice effect may have occurred because of this additional testing.

Table 3

Number of Students Gaining, Losing, or Receiving the Same Score from Pretest to Posttest on Word Reading and Paragraph Meaning of the Stanford Achievement Test, Form W, Primary 1 and the ABC Informal Reading Test

	<u>Gained</u>	<u>Lost</u>	<u>Stayed the Same</u>	<u>Total^a Number of Students</u>
Word Reading	15	10	1	26
Paragraph Meaning	12	11	2	25
ABC Informal	14	0 ^b	15	29

^a Number varies because all students were not present for all testing sessions

^b Twelve students scored at the lowest possible level (0) on the pretest and posttest. No losses were possible for this group

Table 4

Distribution of Pretest and Posttest of the ABC Informal Reading Test Placement for Students in an Experimental Reading Program - Summer 1971

<u>Informal Reading Test Level</u>	<u>Pretest</u>	<u>Posttest</u>
O	12	6
A	5	6
B	1	1
C	3	4
D	6	7
E	2	4
F	0	0
G	0	1
	29	29
Number	29	29

second posttest was used as the measure of gain instead of the first test. Slight gains registered from first to second post tests may have been due to practice effects.

Informal Reading Test Results

Table 3 also shows gains and losses for students on the ABC informal reading test. Fourteen students gained, no students lost ground, and fifteen stayed at the same level as on their pretest. However, since twelve students scored at level 0 on the pretest, it was impossible for them to lose ground.

Table 4 shows the distribution of students on the Informal Reading Test at the beginning and end of the program.

Twenty-one children were at the pre-primer level (O-A-B-L) on the pretest. At the time of the posttest, seventeen children were still at the pre-primer level.

Further analysis showed that 15 of the 29 children tested had not gained a single level. Seven students gained one level, four gained two levels, two gained three levels and one student gained four levels.

One student in school B gained two or more levels while six students in school A gained two or more levels.

In short, it appears that we have random gains and losses on both the formal and informal reading inventories.

Conclusions

The statistical results are quite conclusive. This project did not reach its goal of bringing each participating child up to the third grade level in reading. Expert opinion, based on analysis of the Informal Reading Tests suggest that four children made substantial reading progress. Twenty-five children did not make substantial progress on either the formal or informal tests, although the test administrator's notes suggest that some unmeasured gains may have taken place (e. g. attitude improvement).

While the results of the program do not appear subject to question, there is a question of whether or not the program was given an adequate test of its efficacy.

In some major respects the program operations did not fulfill the expectations of REC officials. Average student exposure time was less than half the time advocated. Fewer than half the students completed the 45 lessons in the program.

It should be noted, however, that those students who completed the 45 lessons made no greater gains than students who completed fewer lessons. Students who spent the most time in the program fared no better than students with less time in the program. None of the students reached the third grade criterion, regardless of the amount of exposure to the program. (Results for individual students are given in the Appendix).

Deviations from REC plans were due, in part, to imperfect communications between REC and Minneapolis School officials. The communications problem, in turn, was probably due to the extremely short planning and installation time which were available for initiating the program.

In summary, it appears that the Kobler Reading Program was not given an adequate test due to insufficient planning time. This problem should not imply criticism of program planners, however, since it appears that the choice

was to try the Program under imperfect conditions, or not to try it at all. The rationale appeared to be that if the program succeeded great gains would have been made; if it failed, little would have been lost.

Considering the conditions under which the program operated it must be concluded that most participating children did not substantially improve their reading. In view of their previous deficit in reading it is a point of conjecture as to whether or not they would have made any greater progress if they had remained in their original program for this brief period.

Recommendations

1. Limit experimental studies if adequate planning time is not available.

Although in this case there was little choice about involvement in the program, and little or no cost to the school district, the experience does provide a practical example of the need for adequate time to spell out detailed objectives and conditions under which the program will operate.

2. Further tests of the Kobler Reading Program should be conducted outside the Minneapolis Public Schools.

This recommendation is an opinion based on teachers' and administrators' comments. The climate for further experimentation with this approach does not appear favorable. In part, this climate is a result of the communications problem.

Table 5
Individual Test Results for Kobler Reading Program Participants
School A

Student Number	Informal Testing ABC Level Completed		Formal Testing - Stanford Achievement Test Form W Primary I				Enrolled	Days Attended	Total Hours Minutes
	Date	Book Level	Raw Score	Word Reading Grade Level	Paragraph Meaning Raw Score	Paragraph Meaning Grade Level			
1	Pre	C	19	1.7	2	1.1	5/1	21	14
	Post	C	16	1.6	14	1.6			
2	Pre	O	8	1.1	0	-	4/30	19	40
	Post	O	-	-	-	-			
3	Pre	A	19	1.7	2	1.1	5/11	22	14
	Post	D	-	-	-	-			
4	Pre	A	14	1.5	8	1.4	5/7	26	20
	Post	C	17	1.6	11	1.5			
5	Pre	O	19	1.7	9	1.5	4/30	29	20
	Post	C	21	1.8	23	1.8			
6	Pre	O	11	1.3	12	1.6	4/27	37	40
	Post	O	13	1.4	15	1.6			
7	Pre	A	4	1.0	0	-	4/30	21	14
	Post	A	3	.0-	0	-			
8	Pre	O	17	1.6	0	-	5/7	23	15
	Post	D	21	1.8	14	1.6			
9	Pre	B	22	1.8	13	1.6	5/11	12	8
	Post	D	21	1.8	14	1.6			
10	Pre	A	13	1.4	12	1.6	4/27	29	20
	Post	A	18	1.7	7	1.4			
11	Pre	O	10	1.3	1	1.0	4/27	20	13
	Post	O	8	1.1	0	-			

Table 5
School A (continued)

Student Number	Informal Testing ABC Level Completed		Formal Testing-Stanford Achievement Test Form W Primary I				Last Lesson Worked On	Enrolled	Days Attended		Total Hours Min.
	Date	Book Level	Word Reading Raw Score	Grade Level	Paragraph Meaning Raw Score	Grade Level			To 6/25/71	From 6/28/71 to 7/22/71	
12	Pre	0	21	1.8	1	1.0	4/30	15	7	15	50
	Post	B	22	1.8	11	1.5					
13	Pre	0	8	1.0	12	1.6	4/30	20	16	26	40
	Post	A	14	1.5	2	1.1					
14	Pre	A	16	1.6	2	1.1	4/30	34	10	33	40
	Post	C	16	1.6	1	1.0					
15	Pre	A	13	1.4	13	1.6	5/11	25	16	31	40
	Post	D	12	1.4	1	1.0					
	Post	E	21	1.8	13	1.6					

Note: The data for the above students is presented separately, as they participated in a revised Kobler program. Dates for this program are from June 23, 1971 until July 30, 1971.

Table 6
Individual Test Results for Kobler Reading Program Participants
School B

Student Number	Informal Testing ABC Level Completed		Formal Testing - Stanford Achievement Test Form W Primary I				Enrolled	Days Attended	Total	
	Date	Book Level	Raw Score	Grade Level	Par Score	Grade Level			Hours	Minutes
16	Pre	0	9	1.2	12	1.6	5/7	29	19	20
	Post	0	5	1.0	10	1.5				
		0	9	1.2	8	1.4				
17	Pre	D	26	2.3	17	1.7	5/7	31	20	40
	Post	D	19	1.7	15	1.1				
		E	26	2.1	12	1.6				
18	Pre	C	22	1.8	14	1.6	5/11	23	15	20
	Post	C	23	1.9	12	1.6				
		D	25	2.0	17	1.7				
19	Pre	E	24	1.9	22	1.8	5/7	34	22	40
	Post	E	29	2.4	23	1.8				
20	Pre	0	13	1.4	14	1.6	5/7	38	25	20
	Post	0	18	1.7	11	1.5				
21	Pre	D	20	1.7	10	1.5	5/3	15	10	
	Post	D	21	1.8	8	1.4				
22	Pre	0	13	1.4	11	1.5	5/3	15	10	
	Post	0	12	1.4	absent					
23	Pre	D	18	1.7	15	1.6	5/7	36	24	
	Post	E	22	1.8	24	1.9				
		E	25	2.0	21	1.8				
24	Pre	E	26	2.1	16	1.7	5/7	18	12	
	Post	NA								

Table 6

School B (continued)

Student Number	Informal Testing ABC Level Completed		Formal Testing - Stanford Achievement Test Form W Primary I						Enrolled	Days Attended	Total Hours Minutes
	Date	Book Level	Word Reading Raw Score	Word Reading Grade Level	Paragraph Meaning Raw Score	Paragraph Meaning Grade Level	Last Lesson Worked On				
25	Pre 5/7	D	25	2.0	17	1.7	45	5/7	29	19 20	
	Post 6/9	E	22	1.6	7	1.4					
	6/27	E	-	-	-	-					
26	Pre 4/30	C	19	1.7	22	1.8	37	5/3	25	16 40	
	Post 6/9	D	20	1.7	17	1.7					
27	Pre 4/30	E	27	2.2	25	1.9	45	5/4	25	16 40	
	Post 6/9	G	28	2.3	29	2.2					
28	Pre 5/7	O	10	1.3	6	1.4	31	5/7	25	16 40	
	Post 6/27	A	-	-	-	-					
29	Pre 5/7	D	20	1.7	24	1.9	34	5/7	16	12	
	Post 6/9	E	21	1.8	26	2.0					
30	Pre 4/30	A	15	1.5	10	1.5	20	5/4	19	12 40	
	Post 6/9	A	11	1.3	6	1.3					