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ABSTRACT

This report evaluates the Secondary Developmental Reading Program, a component of the Ohio Disadvantaged Pupil Program Fund (DPPF), in terms of the 1982-83 program objectives. Twelve project reading teachers worked in eight Columbus senior high schools with 843 pupils scoring at or below the 36th percentile in reading achievement. A pilot project using Commodore PET computers for computer-assisted instruction and computer-managed instruction (CAI/CMI) served 261 of the students. The program stressed literacy survival skills and featured diagnostic testing, individualized and small group instruction, on-going pupil evaluation, and teacher inservice meetings. Student data (n=372) were collected from pupil census information, the Metropolitan Achievement Test, and hands-on computer reading tests. Teacher data came from three inservice evaluation and assessment instruments. In-process evaluation data were obtained from classroom observations. The evaluation procedures, results and recommendations are discussed, including a cost-benefit analysis. The reading achievement gain objective of 10.5 Normal Curve Equivalents (NCE's) was not attained, but the CAI/CMI objective of seven prescriptive reading skills was. Only one of three inservice objectives was met. Due to ongoing problems of pupil attendance and achievement and drastic funding reductions, all DPPF project evaluations should be reviewed for program revision. Appendix contains the evaluation and assessment forms. (BS)

# Education Consolidation and Improvement Act - Chapter 1

# FINAL EVALUATION REPORT
# LANGUAGE DEVELOPMENT COMPONENT
# SECONDARY DEVELOPMENTAL READING PROGRAM

July, 1983

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# FINAL EVALUATION REPORT
# LANGUAGE DEVELOPMENT COMPONENT
# SECONDARY DEVELOPMENTAL READING PROGRAM

July, 1983

## Program Description

The Secondary Developmental Reading (SDR) Program began in the Columbus Public Schools in the fall of 1971 as a component of the Ohio Disadvantaged Pupil Program Fund. The 1982-83 version of the SDR Program was located in eight Columbus senior high school buildings. Twelve project reading teachers worked in these eight schools with 843 pupils in grades 9-12 who scored at or below the 36th percentile on a standardized achievement test in reading.

Within the 1982-83 SDR Program five teachers in three senior high schools participated in a pilot project which utilized Commodore PET computers for computer assisted instruction and computer managed instruction (CAI/CMI). For evaluation purposes, CAI/CMI related data were collected from only two of these schools. The third school did not become a CAI/CMI project school until December, and evaluation data from this school were limited to Regular SDR program data. The computers, software, and attendant services were contracted with the Prescription Learning Laboratory Company of Springfield, Illinois. In addition to providing a new technique tei reading and language instruction, the use of CAI/CMI was alsoi intended to enable teachers to serve more pupils than would be possible in regular SDR classrooms. The use of CAI/CMI was also intended to be a cost-effective alternative to replacing badly worn conventional equipment. Of the 843 pupils in the SDR program, 261 received computer assisted instruction.

The purpose of the SDR Program is to assist underachieving senior high pupils in raising their reading and communication skills. Emphasis oif the program is placed on literacy survival skills necessary to function in our word-oriented world.

Features of the SDR Program include:

1. Diagnostic testing to assess a pupil's individual reading strengths and weaknesses.
2. Individualized instruction tailored to meet the needs of pupils.
3. Small group instruction.
4. On-going evaluation of pupils to assess their reading nees.
5. Inservice meetings for teachers.

## Evaluation Objectives

Objective 1.1 An evaluation sample will be comprised of pupils who score at or below the 36%ile on a pretest and are in attendance at least 80% of the instructional period. The average reading growth of pupils in the evaluation sample and participants in the Prescription Learning Laboratory will be 1.5 NCE points for each month of instruction..

Objective 1.2 Participants in the Prescription Learning Laboratory who have attended at least 80% of the instructional period will have passed an average of seven prescriptive reading skill objectives from the time of the placement test to May 27, 1983 as measured by the Prescription Learning Laboratory Mastery Test.

Objective 2.1 To provide at least two inservice sessions to program personnel such that at least 80% of the inservice participants will rate each session as valuable in providing information that will assist them in carrying out their program responsibilities.

Objective 3.1 After completing the Prescription Learning Laboratory inservice designed to instruct teachers on operating teaching machines, instructing pupils in their use, prescribing instructional strategies, and maintaining a computerized instructional management system, all teachers will be able to respond correctly to 80 percent of the items included in a teacher training package instrument administered to teachers on or before October 15, 1982.

Objective 3.2 In May 1983, all teachers in the project will indicate that the inservice activities provided by the Prescription Learning Laboratory Company during the 1982-83 school year were of value in assisting them to use the teaching machines, instructing pupils in their use, prescribing instructional strategies, and to maintain a computerized instructional management system.

## Evaluation Design

The evaluation design for the SDR Program called for the collection of data in three areas.

1. Pupil Census Information

   The Pupil Census Form was developed for the purpose of collecting pupil demographic and participation data in the Secondary Developmental Reading Program. Project teachers maintained the Pupil Census Forms for all pupils throughout the school year and completed these forms at the end of the program year or when the pupils left the program.

   Data collected on the Pupil Census Form were the number of days the pupil was enrolled in the program, the number of days the pupil was in attendance, and the average number of hours per week the project teacher served the pupil. A copy of a Pupil Census Form can be found in the Appendix.

2. Standardized Achievement Test Information

The purpose of the administration of the standardized achievement test was to collect pretest-posttest achievement data on all SDR Program pupils to determine if Objective 1.1 was achieved. The standard achievement test used was the Metropolitan Achievement Test, Reading Comprehension, Form JS (MAT; 1978). Secondary Developmental Reading Program teachers administered these tests on October 4-8, 1982, and again on May 2-6, 1983. The form, subtest and test levels of the Metropolitan Achievement Test used for each grade level are listed below:

| Grade | Form | Subtest | Test Level | |
|---|---|---|---|---|
| | | | Pretest | Posttest |
| 9 | JS | Reading Survey | Advanced 1 | Advanced 1 |
| 10 | JS | Reading Survey | Advanced 1 | Advanced 2 |
| 11 | JS | Reading Survey | Advanced 2 | Advanced 2 |
| 12 | JS | Reading Survey | Advanced 2 | Advanced 2 |

3. Mastery in the prescription reading skill objectives was determined by hands-on testing at the computer terminals for pupils served in the CAI/CMI units. A maximum of 20 objectives could be mastered by high school CAI/CMI pupils. If a pupil mastered all of these, he would then receive instruction in the same 20 basic objectives at the next higher instructional level. The time of pretest varied with the time a pupil began receiving computer assisted instruction. Posttest data consisted of all skills mastered by April 30, 1983.

4. Inservice Evaluation Information

a. The teachers' perceptions of the value of the inservice was to be determined by the rating of the inservice participants on the General Inservice Evluation Form. A copy of this instrument appears in the Appendix. The inservice programs were intended to assist project teachers in teaching remedial secondary reading. A modified version of the General Inservice Evaluation Form was used at the orientation meeting which occurred September 7, 1982. A copy of the modified form also appears in the Appendix.

b. The locally developed Prescription Learning Laboratory Inservice Assessment Form was designed to assess the knowledge gained by CAI/CMI teachers from initial instructional meetings which were presented by the Prescription Learning Laboratory Company. The meetings for high school CAI/CMI teachers occurred on September 14-15, 1982. In addition to items of instructional content, the instrument also contained rating scale items for teachers to rate the quality of the inservice meetings and the quality of the services of the visiting company consultants in helping them to implement the program. A copy of the instrument is found in the Appendix.

c. The CLEAR and SDR Computer Training Evaluation Form was designed to obtain ratings by CAI/CMI teachers of the usefulness of the overall CAI/CMI inservice activities for the 1982-83 school year. The instrument was distributed in April, 1983, and collected in May, 1983. There was a total of three CAI/CMI inservice meetings in the 1982-83 school year. These occurred September 14-15, and March 22. The ratings also took into consideration the ongoing help provided by visiting company consultants, and printed materials provided by the Prescription Learning Laboratory Company. A copy of the instrument is found in the Appendix.

In addition to the types of data specified in the evaluation design, process evaluation data were obtained in a series of on-site visits to program classrooms. Observations were conducted in all SDR units during the pretest administration of the standardized achievement test (October 4-8, 1982), and in a representative sample of SDR units during the administration of the posttest (May 2-6, 1983). These observations were conducted by personnel from the Department of State and Federal Programs and the Department of Evaluation Services. The purpose of pretest and posttest observations was to obtain pertinent information regarding testing environment and test administration. Instruments used were the Chapter 1 and DPPF Pretest Observation Scale, and the Chapter 1 and DPPF Testing Observation Scale. The latter instrument was used for posttest observations. Observations were also conducted during the school year by a project evaluator to two high schools having CAI/CMI units, where four teachers in the pilot project were interviewed. Data collected in the CAI/CMI observations included teacher responses to an informal interview intrument, Questions for PLL Labs. A copy of each of the observation instruments is found in the Appendix.

## Major Findings

Due to the fact that the 1982-83 SDR Program contained two treatment groups (regular instruction group and CAI/CMI group) data on enrollment/attendance and achievement testing are reported below in two ways. These data are first presented for the overall program regardless of treatment group. The second presentation compares the two treatment groups in regard to enrollment/attendance data and achievement test data.

In interpreting the pretest-posttest achievement data, the reader should be aware of the pupil selection process. Previous norm-referenced reading achievement data and staff recommendations were used to develop a pool of pupils to be pretested. To be eligible for the program the pupil had to score at or below the 36th percentile on the pretest. Once the eligibility list was established, pupils were selected in order of their test scores with the lowest scoring pupils selected first.

During the 1982-83 school year the SDR Program served 843 pupils. Of the 843 pupils, 674 (80.0%) were ninth-graders, 122 (14.5%) were tenth graders, 36 (4.3%) were eleventh graders, and 11 (1.3%) were twelfth graders. Of the 843 pupils, 422 (50.1%) attended the minimum number of days (112) to meet the 80% attendance criterion level

contained in Objective 1.0. A breakdown by grade level showed that 356 (52.8%) of the ninth-graders, 54 (44.3%) of the tenth-graders, 8 (22.2%) of the eleventh-graders, and 4 (36.4%) of the twelfth-graders met the attendance criterion. The overall attendance rate for the program was 81.8%. The average number of days of enrollment and attendance for program pupils was 115.9 and 94.8 respectively. The average daily membership was 698.1. Table 1 contains the pupil attendance data.

The evaluation sample consisted of those pupils who attended 80% (112) of the 140 program days, and who received both a pretest and a posttest in the Metropolitan Achievement Test. The sample also excluded 26 pupils who were determined to be non-English speaking. Of the 843 pupils served by the program, 372 (44.1%) were in the evaluation sample.

The analysis of pretest-posttest achievement data provided minimums, maximums, averages, and differences for raw and derived scores by grade level. The derived scores used in the analysis were percentiles, grade equivalents, and normal curve equivalents. Caution should be exercised in interpreting the data at grades 11 and 12 because of the very small number of pupils who met the attendance criterion and had both a pretest and a posttest score.

Raw scores are reported here for grades 9, 11 and 12 only, since these are the only grades which received the same level in both administrations of the test. The average raw score gain in ninth grade was 7.3 items which represented an increase of 13.3% of the 55 items on the Advanced 1 level of the MAT. In eleventh grade there was an average raw score gain of 7.5 items, or 15.0% of the 50 items on the Advanced 2 level on the MAT. In the twelfth grade there was an average raw score gain of 25.0 items, or 50.0% on the Advanced 2 level of the MAT. Raw score data are presented in Table 2. In grade 10, pretest and posttest were administered at different test levels, with the result that any pretest-posttest comparison of raw scores would be meaningless for this grade. However, the use of alternative level testing was judged to provide a better match between pupil ability and test difficulty. A preliminary study at the time of test selection indicated that the comparison of derived scores (percentiles, grade equivalents, and normal curve equivalents) across different levels of the MAT would provide suitable reliability and validity in the assessment of pupil progress.

Table 3 contains pretest-posttest percentile data. The median percentile for the pretest ranged from 8.0 at grade 12 to 19.8 at grade 9. The median percentile for the posttest ranged from 18.5 at grade 11 to 89.0 at grade 12. These data indicate that while there was improvement at all grades, only at twelfth grade was the median posttest percentile score at or above the 36th percentile.

Table 1

Number of Pupils Served, Averages for Days of Enrollment, Days of Attendance, Daily Membership and Hours of Instruction Per Week, and Pupils Attending 80% of Days Reported by Grade Level

| Grade | Pupils Served | Girls | Boys | Average Days of Enrollment | Average Days of Attendance | Average Daily Membership | Average Hrs. of Inst. Per Pupil Per Week | Pupils Attending 80% of Days |
|---|---|---|---|---|---|---|---|---|
| 9 | 674 | 303 | 371 | 120.0 | 98.2 | 577.9 | 3.6 | 356 |
| 10 | 122 | 42 | 80 | 102.4 | 85.0 | 89.3 | 3.6 | 54 |
| 11 | 36 | 19 | 17 | 92.8 | 72.9 | 23.9 | 3.6 | 8 |
| 12 | 11 | 4 | 7 | 90.6 | 69.6 | 7.1 | 3.6 | 4 |
| Total | 843 | 368 | 475 | 115.9 | 94.8 | 698.1 | 3.6 | 422 |

Table 2

All Secondary Developmental Reading
Minimum, Maximum, Average and Standard Deviation
of the Pretest and Posttrest Raw Scores
Reported by Grade Level

| | | | Pretest | | | | Posttest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Number Of Test Items | Number of Pupils | Min. | Max. | Average Raw Score | Standard Deviation | Min. | Max. | Average Raw Score | Standard Deviation | Average Change |
| 9 | 55 | 322 | 5 | 35 | 26.0 | 7.0 | 9 | 55 | 33.3 | 9.6 | 7.3 |
| 11 | 50 | 4 | 7 | 29 | 19.3 | 11.4 | 14 | 37 | 26.8 | 9.8 | 7.5 |
| 12 | 50 | 1 | 23 | 23 | 23.0 | 0.0 | 48 | 48 | 48 | 0.0 | 25.0 |

Note. Raw scores are not reported for grade 10 because that grade received different levels of the test in pretest and posttest administrations. A comparison of raw scores across different test levels would be meaningless, since item content and number of items varied across the two test levels.

Table 3

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Percentiles
Reported by Grade Level

| Grade | Number of Pupils | Pretest | | | | Posttest | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | Median Percentile | Standard Deviation | Min. | Max. | Median Percentile | Standard Deviation |
| 9 | 322 | 1.0 | 36.0 | 19.8 | 11.4 | 1.0 | 99.0 | 27.6 | 22.3 |
| 10 | 45 | 1.0 | 36.0 | 10.4 | 9.4 | 1.0 | 98.0 | 22.8 | 19.5 |
| 11 | 4 | 1.0 | 24.0 | 12.5 | 13.3 | 1.0 | 36.0 | 18.5 | 14.8 |
| 12 | 1 | 8.0 | 8.0 | 8.0 | | 89.0 | 89.0 | 89.0 | |
| Total | 372 | | | 18.4 | 11.3 | | | 26.3 | 22.1 |

Table 4 contains pretest-posttest grade equivalent data. The median grade equivalent for the pretest ranged from 2.7 at grade 11 to 6.7 at grade 12. The median grade equivalent for the posttest ranged from 7.4 at grade 9 to 12.9 at grade 12. These data indicated that: (a) there was a considerable increase in the median grade equivalent at grades 11 and 12; (b) there was a greater than expected increase in the median grade equivalent at all grades, and (c) that despite the gains, the pupils at the end of their ninth, tenth and eleventh grade years had a median grade equivalent at least two years below grade level in reading achievement.

The presentation of achievement data thus far has included results from the analysis of raw scores, percentiles. and grade equivalents. Raw scores are equal units of measurement, but can only provide a limited interpretation of achievement data. Percentiles and grade equivalents provide comparative information but are not equal units of measure. Caution is advised in drawing conclusions about program impact from any of the scores above. Normal curve equivalents (NCE's) are generally considered to provide the truest indication of student growth in achievement, since they provide comparative information in equal units of measurement. Data for normal curve equivalents are presented in Table 5.

Objective 1.1 states that the evaluation sample would be composed of pupils who scored below the 36th percentile on the pretest and were in attendance 80% of the program's treatment period. In order to meet the attendance criterion the pupil had to attend at least 112 days of the seven month (140 days) treatment period. To achieve Objective 1.0 the average growth in reading achievement of pupils in the evaluation sample had to be 1.5 NCE's for each month of the treatment period which is an average of 10.5 NCE's for the seven month program.

The overall NCE gain for the program was 7.6 or an average of 1.1 NCE's for each of the seven months of the treatmeat period. This did not meet the evaluation criterion of 1.5 NCE's gained for every month the pupils were in the program. The greatest gain shown was at the twelth grade level where a total NCE gain of 55.4 was recorded (an average of 7.9 NCE's/month). However, caution should be exercised in any judgement of NCE gains for grade 12 because the sample consisted of only one pupil.

It should be noted that NCE scores are based on percentiles, which compare the pupil's performance in relation to the general population. No change in NCE score would indicate that a pupil has progressed normally over the school year. Even a small gain in percentile or NCE score would indicate that a pupil has advanced over the school year at a greater rate than would be expected from the pupil's original position in relation to the general population. This becomes evident when we note that substantial progress was made at all grade levels in regard to grade equivalent scores. Table 6 contains data related to the changes in NCE scores for three ranges: (a) decrease in NCE scores, (b) no change in NCE scores, and (c) gain in NCE scores. The data indicates

Table 4

Minimum, Maximum, Median and Standard Deviation of the Pretest and Posttest Grade Equivalents Reported by Grade Level

| Grade | Number of Pupils | Pretest | | | | Posttest | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | Median Grade Equivalents | Standard Deviation | Min. | Max. | Median Grade Equivalent | Standard Deviation |
| 9 | 322 | 1.5 | 7.7 | 5.8 | 1.7 | 1.8 | 12.9 | 7.4 | 2.6 |
| 10 | 45 | 2.2 | 8.8 | 5.7 | 1.7 | 2.3 | 12.9 | 8.3 | 2.4 |
| 11 | 4 | 1.8 | 8.5 | 2.7 | 3.7 | 2.8 | 10.5 | 8.2 | 3.3 |
| 12 | 1 | 6.7 | 6.7 | 6.7 | | 12.9 | 12.9 | 12.9 | |
| Total | 372 | | | 5.8 | 1.7 | | | 7.4 | 2.6 |

Table 5

Minimum, Maximum, Average, and Standard Deviation of the Pretest and Posttest Normal Curve Equivalents (NCE) Reported by Grade Level

| Grade | Number of Pupils | Pretest | | | | Posttest | | | | Average Change |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | Average NCE | Standard Deviation | Min. | Max. | Average NCE | Standard Deviation | |
| 9 | 322 | 1.0 | 42.5 | 29.7 | 11.3 | 1.0 | 99.0 | 36.9 | 16.8 | 7.2 |
| 10 | 45 | 1.0 | 42.5 | 25.5 | 10.0 | 1.0 | 93.8 | 35.0 | 15.3 | 9.5 |
| 11 | 4 | 1.0 | 35.1 | 18.1 | 19.7 | 1.0 | 42.5 | 26.3 | 18.0 | 8.2 |
| 12 | 1 | 20.4 | 20.4 | 20.4 | | 75.8 | 75.8 | 75.8 | | 55.4 |
| Total | 372 | | | 29.1 | 11.3 | | | 36.7 | 16.7 | 7.6 |

that 250 (67.2%) pupils made gains in NCE scores. The fact that 250 pupils did better than expected indicates that these pupils who met the attendance criterion benefitted from the individualized instruction provided by the program. The least gain in NCE's occurred at grade nine where the total NCE gain was 7.2 or 1.0 NCE's/month.

Table 6

Changes in NCE Scores
for All Grades

| | Range | Number of Pupils | % of Pupils |
|---|---|---|---|
| Decrease in NCE Scores | -29.8 to -0.7 | 87 | 23.4 |
| No Change in NCE Scores | 0 | 35 | 9.4 |
| Gain in NCE Scores | 0.7 to 70.3 | 250 | 67.2 |

Tables 7-11 present comparisons between the pilot group of pupils receiving computer assisted/computer managed instruction (CAI/CMI) in reading and the group receiving the regular program instruction. As indicated in Table 7, there were 261 pupils served by the pilot project and 582 pupils who received regular reading instruction. The CAI/CMI group averaged more days of attendance per pupil with an overall average of 99.5 days as compared to 92.7 days for the regular group. The Regular group, however, did average more days of attendance at the tenth and eleventh grade levels. The evaluation sample of 372 pupils was comprised of 154 pupils in the pilot group and 218 pupils in the regular group.

Achievement data for the two subpopulations of the program are presented in Tables 8-11. It will be noted that the number of eleventh and twelfth grade pupils in the evaluation sample is very small for both groups, and caution is advised in interpreting data for those grades. There were no twelfth grade pupils in the regular group and only one pupil in the CAI/CMI group. The number of tenth grade pupils is also relatively small in both groups. A greater degree of validity can be assumed in comparisons for grade 9, where there were 134 pupils in the pilot project and 188 pupils in the regular group. It is also assumed that valid group comparisons across grade levels can be made.

Table 8 indicates greater improvement in raw score for the CAI/CMI group than for the regular group. The average change scores were 8.1 items for the CAI/CMI group and 6.7 items for the regular group in ninth grade, and in the eleventh grade the average change scores were 9.3 items for the pilot group and 2.0 items for the regular group. An impressive change score of 25.0 items occurred in the CAI/CMI twelfth grade, where there was only one pupil. There were no twelfth grade pupils in the regular group. Raw score data are not reported for grade

Table 7

Number of Pupils Served, Averages for Days of Enrollment, Days of Attendance, Daily Membership and Hours of Instruction Per Week, and Pupils Attending 80% of Days Reported by Grade Level for Pupils Receiving Reading Instruction with Computers (CAI/CMI Group) and Pupils Receiving Reading Instruction without Computers (Regular Group)

| Grade | Pupil Served | Girls | Boys | Average Days of Enrollment | Average Days of Attendance | Average Daily Membership | Average Hrs. of Inst. Per Pupil Per Week | Pupils Attending 80% of Days |
|---|---|---|---|---|---|---|---|---|
| **CAI/CMI Group** | | | | | | | | |
| 9 | 205 | 94 | 111 | 122.6 | 106.8 | 179.5 | 3.5 | 139 |
| 10 | 43 | 17 | 26 | 94.2 | 75.4 | 28.9 | 3.5 | 17 |
| 11 | 11 | 7 | 4 | 73.6 | 62.6 | 5.8 | 3.5 | 3 |
| 12 | 2 | 0 | 2 | 89.5 | 71.5 | 1.3 | 3.5 | 1 |
| Total | 261 | 118 | 143 | 115.6 | 99.5 | 215.4 | 3.5 | 160 |
| **Regular Group** | | | | | | | | |
| 9 | 469 | 209 | 260 | 118.9 | 94.4 | 398.5 | 3.6 | 217 |
| 10 | 79 | 25 | 54 | 106.9 | 90.2 | 60.3 | 3.6 | 37 |
| 11 | 25 | 12 | 13 | 101.2 | 77.4 | 18.1 | 3.6 | 5 |
| 12 | 9 | 4 | 5 | 90.9 | 69.2 | 5.8 | 3.6 | 3 |
| Total | 582 | 250 | 332 | 116.1 | 92.7 | 482.7 | 3.6 | 262 |

Table 3

Minimum, Maximum, Average, and Standard Deviation
of the Pretest and Posttest Raw Scores Reported by Grade Level
for Pupils Receiving Reading Instruction with Computers (CAI/CMI Group)
and Pupils Receiving Reading Instruction without Computers (Regular Group)

| | | | Pretest | | | | Posttest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Grade | Number Of Test Items | Number of Pupils | Min. | Max. | Average Raw Score | Standard Deviation | Min. | Max. | Average Raw Score | Standard Deviation | Average Change |
| CAI/CMI Group | | | | | | | | | | | |
| 9 | 55 | 134 | 6 | 35 | 27.9 | 7.1 | 9 | 54 | 36.1 | 9.8 | 8.1 |
| 11 | 50 | 3 | 7 | 29 | 16.0 | 11.5 | 14 | 37 | 25.3 | 11.5 | 9.3 |
| 12 | 50 | 1 | 23 | 23 | 23.0 | 0.0 | 48 | 48 | 48.0 | 0.0 | 25.0 |
| Regular Group | | | | | | | | | | | |
| 9 | 55 | 188 | 5 | 35 | 24.7 | 6.6 | 13 | 55 | 31.4 | 9.0 | 6.7 |
| 11 | 50 | 1 | 29 | 29 | 29.0 | 0.0 | 31 | 31 | 31.0 | 0.0 | 2.0 |
| 12 | 50 | 0 | | | | | | | | | |

Note. Raw scores are not reported for grade 10 because that grade received different levels of the test in pretest and posttest administrations. A comparison of raw scores across different test levels would be meaningless, since item content and number of items varied across the two test levels.

Table 9

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Percentiles Reported by Grade Level
for Pupils Receiving Reading Instruction with Computers (CAI/CMI Group)
and Pupils Receiving Reading Instruction without Computers (Regular Group)

| Grade | Number of Pupils | Pretest | | | | Posttest | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | Median Percentile | Standard Deviation | Min. | Max. | Median Percentile | Standard Deviation |
| CAI/CMI Group | | | | | | | | | |
| 9 | 134 | 1.0 | 36.0 | 26.3 | 11.6 | 1.0 | 98.0 | 35.8 | 23.7 |
| 10 | 16 | 1.0 | 28.0 | 15.0 | 8.0 | 1.0 | 98.0 | 20.5 | 29.1 |
| 11 | 3 | 1.0 | 24.0 | 6.7 | 13.3 | 1.0 | 36.0 | 14.0 | 17.7 |
| 12 | 1 | 8.0 | 8.0 | 8.0 | 0.0 | 89.0 | 89.0 | 89.0 | 0.0 |
| Total | 154 | | | 24.0 | 11.6 | | | 32.5 | 24.5 |
| Regular Group | | | | | | | | | |
| 9 | 188 | 1.0 | 36.0 | 16.2 | 10.5 | 1.0 | 99.0 | 23.7 | 20.0 |
| 10 | 29 | 2.0 | 36.0 | 9.5 | 10.1 | 4.0 | 46.0 | 23.0 | 10.6 |
| 11 | 1 | 24.0 | 24.0 | 24.0 | 0.0 | 23.0 | 23.0 | 23.0 | 0.0 |
| 12 | 0 | | | | | | | | |
| Total | 218 | | | 15.6 | 10.5 | | | 23.6 | 18.9 |

Table 10

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Grade Equivalents Reported by Grade Level
for Pupils Receiving Reading Instruction with Computers (CAI/CMI Group)
and Pupils Receiving Reading Instruction without Computers (Regular Group)

| | | Pretest | | | | Posttest | | | |
|---|---|---|---|---|---|---|---|---|---|
| Grade | Number of Pupils | Min. | Max. | Median Grade Equivalents | Standard Deviation | Min. | Max. | Median Grade Equivalent | Standard Deviation |
| CAI/CMI Group | | | | | | | | | |
| 9 | 134 | 1.6 | 7.7 | 6.7 | 1.7 | 1.8 | 12.9 | 8.3 | 2.7 |
| 10 | 16 | 2.2 | 8.0 | 6.2 | 1.5 | 2.3 | 12.9 | 7.9 | 3.4 |
| 11 | 3 | 1.8 | 8.5 | 2.4 | 3.7 | 2.8 | 10.5 | 7.4 | 3.9 |
| 12 | 1 | 6.7 | 6.7 | 6.7 | 0.0 | 12.9 | 12.9 | 12.9 | 0.0 |
| Total | 154 | | | 6.6 | 1.7 | | | 8.3 | 2.8 |
| Regular Group | | | | | | | | | |
| 9 | 188 | 1.5 | 7.7 | 5.3 | 1.6 | 2.4 | 12.9 | 7.0 | 2.4 |
| 10 | 29 | 2.8 | 8.8 | 5.3 | 1.8 | 3.8 | 10.5 | 8.3 | 1.7 |
| 11 | 1 | 8.5 | 8.5 | 8.5 | 0.0 | 8.9 | 8.9 | 8.9 | 0.0 |
| 12 | 0 | | | | | | | | |
| Total | 218 | | | 5.3 | 1.6 | | | 7.0 | 2.4 |

Table 11

Minimum, Maximum, Average, and Standard Deviation of the Pretest and Posttest Normal Curve Equivalents (NCE) Reported by Grade Level for Pupils Receiving Reding Instruction with Computers (CAI/CMI Group) and Pupils Receiving Reading Instruction without Computers (Regular Group)

| Grade | Number of Pupils | Pretest Min. | Pretest Max. | Pretest Average NCE | Pretest Standard Deviation | Posttest Min. | Posttest Max. | Posttest Average NCE | Posttest Standard Deviation | Average Change |
|---|---|---|---|---|---|---|---|---|---|---|
| CAI/CMI Group | | | | | | | | | | |
| 9 | 134 | 1.0 | 42.5 | 32.5 | 11.2 | 1.0 | 93.3 | 41.7 | 17.3 | 9.2 |
| 10 | 16 | 1.0 | 37.7 | 27.5 | 9.2 | 1.0 | 93.3 | 37.8 | 23.2 | 10.3 |
| 11 | 3 | 1.0 | 35.1 | 12.4 | 19.7 | 1.0 | 42.5 | 23.6 | 21.0 | 11.2 |
| 12 | 1 | 20.4 | 20.4 | 20.4 | 0.0 | 75.8 | 75.8 | 75.8 | 0.0 | 55.4 |
| Total | 154 | | | 31.5 | 11.6 | | | 41.2 | 18.3 | 9.7 |
| Regular Group | | | | | | | | | | |
| 9 | 188 | 1.0 | 42.5 | 27.8 | 10.9 | 1.0 | 99.0 | 33.6 | 15.6 | 5.8 |
| 10 | 29 | 6.7 | 42.5 | 24.4 | 10.4 | 13.1 | 47.9 | 33.5 | 8.5 | 9.1 |
| 11 | 1 | 35.1 | 35.1 | 35.1 | 0.0 | 34.4 | 34.4 | 34.4 | 0.0 | -0.7 |
| 12 | 0 | | | | | | | | | |
| Total | 218 | | | 27.4 | 10.8 | | | 33.6 | 14.8 | 6.2 |

10 due to the fact that tenth grade pretest and posttest were given with different levels of the test, which precludes comparison of raw score data at that grade.

Good progress in terms of median percentile scores was indicated for both groups, as seen in Table 9. The median percentile across grade levels increased from 24.0 to 32.5 in the CAI/CMI group, and from 15.6 to 23.6 in the Regular group. Similar gains are seen in terms of median grade equivalent scores, as presented in Table 10. The median grade equivalent score across grade levels increased from 6.6 to 8.3 in the CAI/CMI group, and from 5.3 to 7.0 in the Regular group.

As indicated earlier, NCE scores are generally considered to provide the most comparative information in equal units of measurement. Data for the two groups in terms of NCE scores are presented in Table 11. The data indicate that greater average NCE gains occurred for the CAI/CMI group than for the Regular group at all grade levels. The average NCE gain across grade levels was 9.7 for the CAI/CMI group, and 6.2 for the Regular group. Grades 10, 11, and 12 of the CAI/CMI group achieved the evaluation criterion of 1.5 NCE's gained for every month in the program, with average monthly gains of 1.5, 1.6, and 7.9, respectively. The gains at grades 10-12 should be interpreted cautiously, however, due to the small number of pupils at those grades. When average gains are considered across grade levels it is evident that, although neither the CAI/CMI group nor the Regular group achieved the evaluation criterion of an average NCE gain of 1.5 per month of instruction, greater progress was achieved in the CAI/CMI group.

Objective 1.2 specified that pupils in the CAI/CMI project who attended at least 80% of the instructional period would make an average gain of seven prescriptive reading skill objectives as measured by the Prescription Learning Laboratory Mastery Test. Testing occurred at the computer terminals using software supplied by the Prescription Learning Laboratory Company. Averages and standard deviations for the prescriptive reading skill objectives are presented in Table 12. The following average gains were made in the number of skill objectives mastered between pretest and posttest: ninth grade, 8.8 objectives; tenth grade, 9.2 objectives; eleventh grade, 4.7 objectives; twelfth grade, 10.0 objectives; and an overall average gain of 8.8 skill objectives. Objective 1.2 was attained by the project. It was also attained at each grade level except grade eleven, where there were only three pupils in the sample. One caution is advised in interpreting mastery test data: the pretest was a placement test, which did not cover all skill objectives in the continuum. Therefore it is not certain that gain scores can be attributed entirely to treatment occurring between pretest and posttest. However, there was a small positive correlation of .27 between gains in the Prescription Learning Laboratory Mastery Test and NCE gains on the Metropolitan Achievement Test, as calculated by the Pearson product-moment formula.

Table 12

Average Scores and Standard Deviations of the Pretest, Posttest, and Change in Skills Mastered in the Prescription Learning Laboratory Mastery Test by Pupils in the CAI/CMI Project

| Grade | Number of Pupils | Pretest Skills Mastered | | Posttest Skills Mastered | | Change | |
|---|---|---|---|---|---|---|---|
| | | Average | Standard Deviation | Average | Standard Deviation | Average | Standard Deviatio |
| 9 | 134 | 5.6 | 2.6 | 14.4 | 5.9 | 8.8 | 5.6 |
| 10 | 16 | 5.2 | 2.6 | 14.4 | 5.1 | 9.2 | 4.1 |
| 11 | 3 | 3.3 | 3.1 | 8.0 | 7.0 | 4.7 | 4.0 |
| 12 | 1 | 10.0 | 0.0 | 10.0 | 0.0 | 10.0 | 0.0 |
| Total | 154 | 5.5 | 2.7 | 14.3 | 5.9 | 8.8 | 5.5 |

Objective 2.1 stated that program personnel would be provided at least two inservice sessions and that at least 80% of the personnel attending each session would rate the session as valuable in providing information that would assist them in carrying out their program responsibilities. Because of budgetary limitations, these specified inservice sessions were not held. An orientation program was held on September 7, 1982 and an evaluation was conducted (see Table 13). It should be noted, however, that even this session was optional since not all teachers could be released from their duties to attend. Of the six teachers who attended the session, five agreed or strongly agreed that the information provided would help them in their program.

Although only one inservice meeting was available for the overall group of SDR teachers, there were an additional three inservice meetings for those SDR teachers who participated in the CAI/CMI pilot project. Orientation meetings for instruction in using the computers and implementing the project were held September 14 and 15, 1982. A follow-up meeting was held March 22, 1983. Objectives 3.1 and 3.2 pertain to inservice for the CAI/CMI teachers.

Objective 3.1 required that all CAI/CMI teachers be able to respond correctly to at least 80 percent of the items on an instrument dealing with content of the inservice sessions. The Prescription Learning Laboratory Inservice Assessment Form was designed to provide evaluation data on this objective, and also to provide an opportunity for teachers to rate the inservice provided. The instrument was administered following the two initial inservice meetings. Results obtained from the questions on inservice content indicated that the objective was not attained, with all four participating teachers scoring below 80 percent.

In rating the first two inservice meetings, high school CAI/CMI teachers assigned a median rating of 3 (good) on a five-point scale to inservice instruction on instructing pupils in the use of teaching machines. However, three other criteria on which the instructions were rated received median ratings placing between poor and satisfactory. These criteria and their ratings were: operating teaching machines 1.3, prescribing instructional strategies 1.5, and maintaining a computerized instructional management system 1.5. Teacher comments suggested an underlying problem: that a great deal of material had to be covered in too short a time (two days).

Table 13

Average Responses and Response Frequencies
for September 7, 1982

| | Number Responding | Average Response | Responses SD (1) | D (2) | U (3) | A (4) | SA (5) |
|---|---|---|---|---|---|---|---|
| **General Meeting** | | | | | | | |
| 1. I think the presentation by Dr. Michael Milone was very worthwhile. | 6 | 3.8 | 1 | 0 | 0 | 3 | 2 |
| 2. The information presented by Dr. Michael Milone will assist me in my program. | 5 | 3.6 | 1 | 0 | 0 | 3 | 1 |
| **Mini Sessions** | | | | | | | |
| 3. The exhibit of materials was very valuable. | 5 | 3.4 | 1 | 0 | 0 | 4 | 0 |
| 4. The information presented by Dr. Milone during the mini-session will assist me in my program. | 6 | 3.2 | 1 | 0 | 0 | 4 | 1 |
| 5. The Chapter 1 mini-session heightened my awareness of overall program procedures. | 2 | 2.5 | 1 | 0 | 0 | 1 | 0 |
| 6. The evaluation presentation will assist me to successfully complete this year's evaluation requirements. | 4 | 3.3 | 1 | 0 | 0 | 3 | 0 |
| **Overall** | | | | | | | |
| 7. There was time to ask questions pertaining to the presentations. | 6 | 3.2 | 1 | 1 | 0 | 4 | 0 |
| 8. Questions were answered adequately. | 6 | 3.5 | 1 | 0 | 0 | 5 | 0 |
| 9. The orientation meeting was worthwhile. | 6 | 3.7 | 1 | 0 | 0 | 4 | 1 |

The Prescription Learning Laboratory Inservice Assessment Form also obtained teachers' ratings of services provided by the visiting consultants from Prescription Learning Laboratory Company. The consultants visited each high school CAI/CMI unit twice a month, providing ongoing inservice and help with special problems. High school CAI/CMI teachers rated the services of the consultants on the same criteria that were used to rate the inservice meetings. The following median ratings were obtained on a five-point scale: operating teaching machines 2.0 (satisfactory), instructing pupils in the use of teaching machines 2.0, prescribing instructional strategies 1.0 (poor), and maintaining a computerized instructional management system 1.5.

Objective 3.2 stated "all teachers in the project wil indicate that the inservice activities provided by the Prescriptive Learning Laboratory Company...were of value in assisting them to use the teaching machines, instructing pupils in their use, prescribing instructional strategies, and to maintain a computerized instructional management system." The CLEAR and SDR Computer Training Evaluation Form was designed to evaluate this objective. The instrument used a five-point scale ranging from "strongly disagree" to "strongly agree," with a mid-point of "undecided". Data were collected in May from the three remaining teachers who had started in the project at the beginning of the school year. No CAI/CMI data were collected from two teachers in a school where a CAI/CMI unit had been installed in December. There had been an additional inservice meeting in March, and the timing of the data collection near the end of the school year permitted an overall perespective of the inservice activities provided in the first year of the pilot project. For purposes of evaluation, inservice activities were defined to include the three training sessions, the ongoing help of visiting consultants, and printed materials provided by the servicing company. Summative data from this instrument are presented in Table 14.

In assessing the overall value of inservice activities in regard to the four criteria stated in the objective, all three teachers gave a rating of 4 (agree) on a five-point scale to each of the four criteria. This would indicate that Objective 3.2 was attained in regard to its separate criteria. Results were somewhat clouded, however, by teachers' ratings of the value of inservice activities in implementing the overall program: one teacher rated this item 4 (agree), but two teachers gave a rating of 3 (undecided). Comments by teachers indicated that initial services of the visiting consultants during the year was very helpful, and that more in-depth knowledge in utilizing computers was desired.

Table 14

Averages and Frequencies of Teacher Ratings of the Value of Overall CAI/CMI Inservice Training to Areas of the Inservice Objective

| Area of Objective | N | Rating | Rating 1 Strongly Disagree | 2 Disagree | 3 Undecided | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|---|
| Learning to use instructional machines | 3 | 4.0 | 0 | 0 | 0 | 3 | 0 |
| Instructing pupils in using machines | 3 | 4.0 | 0 | 0 | 0 | 3 | 0 |
| Prescribing instructional strategies | 3 | 4.0 | 0 | 0 | 0 | 3 | 0 |
| Maintaining computerized instructional management system | 3 | 4.0 | 0 | 0 | 0 | 3 | 0 |
| Implementing overall program | 3 | 3.3 | 0 | 0 | 2 | 1 | 0 |

In addition to the types of data specified in the evaluation design, process evaluation data were obtained by means of on-site visits. Observations were made during the pretest and posttest administrations of the achievement test, in order to gain first-hand information in regard to testing environment and test administration. Visits were also made during the year to the CAI/CMI pilot project.

Elements of the testing environment were generally judged to be good or very good. Aspects of the testing environment that were checked included lighting in the testing area, space for each student, ground or noise level, and temperature. In the one case where the testing environment was judged to be less than acceptable, the problems are a result of the teacher having to use a room next to the ventilation fans that produce excessive noise.

The presentation of the test directions was rated as good or very good in all cases. All teachers read the test directions and a few teachers demonstrated on the board an example of the method for marking the answers. All teachers followed the directions in the examiner's manual. One teacher was rated as "poor" in accuracy for timing the test.

During the testing sessions the appropriate materials were generally judged to be available and used in most cases. The most common omissions were: failing to place a "Testing - Do Not Disturb" sign on the door (four cases), failing to provide pencils with erasers for each student (four cases), failing to use a stopwatch, watch or clock with a second hand for timing the test (two cases), and failing to use a copy of the test booklet for demonstration purposes (two cases).

Several visits were conducted during the school year to the CAI/CMI pilot project units by a project evaluator. Interviews with project teachers in October and November indicated several problems in the implementation of the program. At that time technical difficulties with the computers and tapes had not been overcome. There was also a feeling among project teachers that instructional materials provided at the high school level were not suitable, and that diagnostic and prescriptive materials produced results which were suspect. There were also delays in receiving some of the materials needed for instruction. On the positive side, the computers were considered to provide excellent pupil motivation.

The program evaluation included one further analysis not in the original evaluation design: a cost-benefit analysis comparing the CAI/CMI group and the regular group. This analysis is summarized in Table 15. Costs included in the analysis included teacher salaries and the contract cost for Prescription Learning Laboratory Reading Labs. Normal supplies and incidental costs were not known in regard to the two groups, but were assumed to be evenly distributed. Any error of cost estimate resulting from unknown costs would probably be in the direction of underestimating the cost for the Regular group, since most instructional materials for the CAI/CMI group were included in the Prescription Learning Laboratory contract costs. The cost-benefit analysis indicated the cost per pupil based on average daily membership was approximately the same for both groups ($532.24 for CAI/CMI group and $529.80 for Regular group). However, the CAI/CMI group's average NCE gain was 3.5 NCE points higher than for the Regular group. The CAI/CMI group also had better attendance, with 61.3% of the pupils meeting the attendance criterion and 59.0% meeting all criteria for inclusion in the evaluation sample (attendance, pretest and posttest, and English-speaking). In the Regular group, 45.0% of the pupils met the attendance criterion and 37.5% met all criteria for inclusion in the evaluation sample.

## Summary/Recommendations

The Secondary Developmental Reading Program is an individualized learning program designed to assist secondary pupils who are having reading problems. During the 1982-83 school year, 12 project teachers working in eight senior high schools served a total of 843 pupils.

The program had five objectives. Two objectives pertained to the program as a whole, and an additional three objectives dealt with a computer assisted/computer managed instruction (CAI/CMI) pilot project which was a subset of the program. Objective 1.1 stated that pupils who attended 80% of the seven month treatment period would show an average gain in reding of 1.5 NCE's for each month which is an average gain of 10.5 NCE's overall (seven

Table 15

Cost-Benefit Analysis for 1982-83 Secondary Developmental Reading Program Comparing Group Receiving Computer Assisted Instruction/Computer Managed Instruction (CAI/CMI) and Group Receiving Regular Program Instruction

| Program | Number of Teachers | Program Cost | | Average Daily Membership | | Cost Per Pupil | Pupils Meeting Attendance Criterion | Ratio of Sample to Pupils Served | Average NCE Gain |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Per Teacher | In Program | Per Teacher | | | | |
| SDR-PLL (grades 9-12) with CAI/CMI) | 3 | 114,645 | 38,215.00 | 215.4 | 71.8 | 532.24 | 61.3% | 59.0% | 9.7 |
| SDR grades 9-12 (Regular group) | 9 | 255,735 | 28,415.00 | 482.7 | 53.6 | 529.80 | 45.0% | 37.5% | 6.2 |

months x 1.5 NCE's). This objective was not achieved. The average gain was 7.6 or 1.1 NCE's/month. The grade equivalent data indicated that the "average" ninth- and tenth-grader in the program ended the year reading at approximately the mid-seventh and mid-eighth grade levels respectively.

Objective 2.1 stated that program personnel would be provided at least two inservice sessions and that at least 80% of the personnel attending each session would rate the session as valuable in providing information that would assist them in carrying out their program responsibilities. Objective 2.1 was not achieved. Because of budgetary limitations only one session was held. It was attended by six of the 12 progrm teachers. All but one of the teachers attending the session rated the session as being of assistance to them in their program.

The CAI/CMI pilot project was located in three high schools. Since one of the high schools did not convert to CAI/CMI until December, evaluation data for that school were included in overall program evaluation, but not in the sample for the pilot project. The computer assisted units in the remaining two project schools served 154 pupils. Although neither the pilot project group nor the group receiving regular program instruction attained the achievement criterion, greater gains were noted in the CAI/CMI group. The averge gain in NCE's in a seven month period was 9.7 for the pilot group, compared to 6.2 for the regular group.

Objective 1.2 stated that pupils in the CAI/CMI project who attended 80% of the seven month treatment period would gain an average of seven prescriptive reading skill objectives in mastery tests performed at the computer terminals. This objective was achieved, with an average gain of 8.8 reading skill objectives.

The remaining two objectives pertain to inservice activities provided by Prescription Learning Laboratory Company to teachers in the CAI/CMI project. Inservice activities were intended to provide teachers with instruction in the following areas: operating the project's teaching machines, instructing pupils in the use of teaching machines, prescribing instructional strategies, and maintaining a computerized instructional management system. These four areas of instruction furnished the criteria for objectives 3.1 and 3.2.

Objective 3.1 stated that all CAI/CMI teachers would be able to respond correctly to 80 percent of the items in an instrument dealing with content of the inservice instruction. This objective was not attained. It appeared that the two days of inservice instruction provided in September had not been sufficient considering the great deal of material that had to be covered.

Objective 3.2 stated that all CAI/CMI teachers would indicate in May, 1983 that inservice activities provided by Prescription Learning Laboratory Company during the school year were of value to them in the four areas of inservice instruction identified above. In addition to the initial two day workshop in September, there had been a wrap-up inservice session in March. Inservice activities were also considered to include the on-going help provided by the

company's visiting consultants, and printed materials furnished by the company. This objective was attained, with all three teachers from the two schools in the CAI/CMI sample agreeing that inservice activities were helpful to them in each of the four areas of the objective (operating teaching machines, instructing pupils in use of machines, prescribing instructional strategies, and maintaining a computerized instructional management system). The teachers registered a degree of uncertainty, however, to the value of the inservice activities in overall implementation of the project.

A cost-benefit study indicated that the cost per pupil was approximately the same for the CAI/CMI group and the Regular group. However, the CAI/CMI group produced greater benefits in regard to NCE gains and pupil attendance.

During the 1982-83 school year, the Secondary Developmental Reading Program continued to experience problems in several areas.

1. Pupil attendance: Of the 843 pupils served by the program, only 50.1 % attended 80% of the treatment period. The overall rate of attendance was 81.8%. This is approximately 4.0% below the district-wide average for senior high pupils. These data suggest that pupils are absent approximately one day per week of the program.

2. Pupil achievement: While the reading achievement data indicated that pupils did improve their reading skills, post-test reading levels were far below grade level.

Given the fact that these problems have continued over several project years and given the drastic reduction in DPPF funding, it is recommended that an extensive review of evaluation results for all DPPF projects be conducted with an eye toward program revision.

In addition to general program concerns, the following concerns expressed by teachers in the new CAI/CMI pilot project should be addressed:

1. More time should be allotted for initial inservice instruction, in order to allow instruction in greater depth than was possible in the two day September workshop.

2. Diagnostic and instructional materials should be examined more closely for suitability to the high school level.

3. Delays in receiving needed materials should be eliminated as much as possible.

Since the Secondary Developmental Reading Program is to be continued for the 1983-84 school year, consideration should be given to the following:

1. Conduct the project in schools that will work with project personnel to reduce scheduling problems and increase program attendance.

2. Change the selection criteria so that the pupils are not selected solely on the basis of being the lowest on the pre-test list. Pupils and perhaps parents, should be asked to make a commitment to attend the program classes. Pupil contracting should be considered in this regard.

3. Review evaluation and program data to determine the match between pupil characteristics, program objectives, and instructional activities which will result in the most improvement in student performance. Evaluation procedures should be modified accordingly.

4. Continue to evaluate the CAI/CMI part of the program with an eye toward finding more effective methods of serving the high school pupil who is experiencing reading problems.

# APPENDIX

# GENERAL INSERVICE EVALUATION FORM

Inservice Topic: _____

Presenter(s): _____

_____

Date: _____ _____ (e.g., 9/7/82)

Session: _____ a.m. or _____ p.m.

Fund:
(circle only one)
(1) Chapter 1 (2) DPPF (3) General
(4) Other (Specify) _____

Program:
(circle only one)
(1) ADK (2) Aides (3) CLEAR-Elem (K-5)
(4) CLEAR-Middle (5) HSCA (6) OND
(7) SDR (8) Regular Teacher
(9) Other (Specify) _____

Circle the number that indicates the extent to which you agree with statements 1-4.

| | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. I think this was a very worthwhile meeting. | 1 | 2 | 3 | 4 | 5 |
| 2. The information presented in this meeting will assist me in my program. | 1 | 2 | 3 | 4 | 5 |
| 3. There was time to ask questions pertaining to the presentation. | 1 | 2 | 3 | 4 | 5 |
| 4. Questions were answered adequately. | 1 | 2 | 3 | 4 | 5 |

5. What was the most valuable part of this meeting? _____

_____

6. What was the least valuable part of this meeting? _____

_____

7. What additional information or topics would you like to see covered in future meetings? _____

_____

_____

DES 8/82

ECIA CHAPTER 1
ORIENTATION INSERVICE EVALUATION FORM
September 7, 1982

Fund:
(Circle only one) (1) Chapter 1 (2) DPPF (3) General
(4) Other (specify) _____

Program
(Circle only one) (1) ADK (2) Aides (3) Chapter 1 - Elem. (K-5)
(4) Chapter 1 - Middle (5) HSCA (6) OND
(7) SDR (8) Regular Teacher
(9) Other (specify) _____

Circle the number that indicates the extent to which you agree with statements 1-9.

| | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|
| **General Meeting** | | | | | |
| 1. I think the presentation by Dr. Michael Milone was very worthwhile. | 1 | 2 | 3 | 4 | 5 |
| 2. The information presented by Dr. Michael Milone will assist me in my program. | 1 | 2 | 3 | 4 | 5 |
| **Mini Sessions** | | | | | |
| 3. The exhibit of materials was very valuable. | 1 | 2 | 3 | 4 | 5 |
| 4. The information presented by Dr. Milone during the mini-session will assist me in my program. | 1 | 2 | 3 | 4 | 5 |
| 5. The Chapter 1 mini-session heightened my awareness of overall program procedures. | 1 | 2 | 3 | 4 | 5 |
| 6. The evaluation presentation will assist me to successfully complete this year's evaluation requirements. | 1 | 2 | 3 | 4 | 5 |
| **Overall** | | | | | |
| 7. There was time to ask questions pertaining to the presentations. | 1 | 2 | 3 | 4 | 5 |
| 8. Questions were answered adequately. | 1 | 2 | 3 | 4 | 5 |
| 9. The orientation meeting was worthwhile. | 1 | 2 | 3 | 4 | 5 |

10. What was the most valuable part of this meeting? _____

_____

11. What was the least valuable part of this meeting? _____

_____

12. What additional information or topics would you like to see covered in future meetings?

_____

_____

_____



ES 8-82

PRESCRIPTION LEARNING LABORATORY
INSERVICE ASSESSMENT FORM

## Part I. Inservice Rating Scale

1. The three-day PLL inservice workshop in September provided instruction in the following areas. Please rate the quality of that instruction by circling the appropriate numbered ratings.

| | Poor | Satisfactory | Good | Excellent | Superior |
|---|---|---|---|---|---|
| a. Operating teaching machines | 1 | 2 | 3 | 4 | 5 |
| b. Instructing pupils in the use of teaching machines | 1 | 2 | 3 | 4 | 5 |
| c. Prescribing instructional strategies | 1 | 2 | 3 | 4 | 5 |
| d. Maintaining a computerized management system | 1 | 2 | 3 | 4 | 5 |

2. Visits to your lab by the company consultant are meant to assist you to increase your proficiency in the following areas. Please rate the quality of that assistance by circling the appropriate numbered ratings.

| | Poor | Satisfactory | Good | Excellent | Superior |
|---|---|---|---|---|---|
| a. Operating teaching machines | 1 | 2 | 3 | 4 | 5 |
| b. Instructing pupils in the use of teaching machines | 1 | 2 | 3 | 4 | 5 |
| c. Prescribing instructional strategies | 1 | 2 | 3 | 4 | 5 |
| d. Maintaining a computerized management system | 1 | 2 | 3 | 4 | 5 |

PRESCRIPTION LEARNING LABORATORY
INSERVICE ASSESSMENT FORM

## Part II. Content Assessment

Please circle the one response that best answers each of the following questions.

1. When using the Califone, the student records responses

   a. using the keyboard
   b. by pressing the "student" button
   c. by pressing the "record" button
   d. by pressing both the "student" and "record" buttons
   e. in a workbook

2. The name of the filmstrip projector used in the PLL lab is the

   a. Craig b. Hoffman c. Dukane d. Audiotron e. Califone

3. Which program on the PET computer is used to add, delete, or update student records?

   a. Hands on Testing b. Standardized Testing c. Report Menu
   d. Inquiry Program e. Maintenance Program

4. Student records are stored on the

   a. Floppy Disk b. Tape Cassette c. Printer d. Display Screen
   e. Hard Disk

5. Which objective on the Main Menu gives you a visual display of information with no hard copy?

   a. Hands on Testing b. Standardized Testing c. Report Menu
   d. Inquiry Program e. Maintenance Program

6. The Lab Profile Report prints the skill continuum in regard to

   a. an individual pupil
   b. pupils grouped by lab period
   c. pupils grouped by similar needs
   d. the report to parents
   e. the listing of available materials

7. For the Hands on Testing, the number of questions presented to test each skill is

   a. 1 b. 2 c. 3 d. 6 e. 10

8. Daily scheduling of pupils to the various work stations is determined by the

   a. students b. teacher c. PET computer d. company consultant

9. Which teaching machine allows the operator to control the speed of the machine?

   a. Craig b. Hoffman c. Dukane d. Audiotron e. Califone

10. The button the student should <u>not</u> press while listening to tapes in the Tape Player is

    a. Rewind b. Forward c. Reverse d. Record e. Stop

# CLEAR AND SDR COMPUTER TRAINING EVALUATION FORM

Grade Level (Check one) Elementary_____ Middle School___ High School ___

This is an end-of-the year measure of how well certain inservice training activities have provided help for you in the following areas:

a. Using instructional machines
b. Instructing pupils in the use of instructional machines
c. Prescribing instructional strategies
d. Maintaining a computerized instructional management system

For the purposes of this evaluation form, the term "inservice training" is broadly defined as follows:

a. Workshops or training sessions presented by the company that supplies your computers

b. Help from the visiting company consultants (elementary and high school levels only)

c. Help with technical difficulties via the toll-free telephone number (middle school level only)

d. Instructions and explanations from printed materials supplied by the company - manuals, handbooks, program notebooks, etc.

Circle the number which indicates the extent to which you agree with the following statements (please give a rating to each sub-statement of all items that pertain to your level of instruction):

| | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Workshops or training sessions by the company that supplies our computers have been valuable to me in | | | | | |
| a. learning to use the instructional machines | 1 | 2 | 3 | 4 | 5 |
| b. instructing pupils in using the instructional machines | 1 | 2 | 3 | 4 | 5 |
| c. prescribing instructional strategies | 1 | 2 | 3 | 4 | 5 |
| d. maintaining a computerized instructional management system | 1 | 2 | 3 | 4 | 5 |
| e. implementing the overall program | 1 | 2 | 3 | 4 | 5 |

| | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 2. (To be completed by elementary and high school teachers only) | | | | | |
| The services of the visiting company consultants have been valuable to me in | | | | | |
| a. learning to use the instructional machines | 1 | 2 | 3 | 4 | 5 |
| b. instructing pupils in using the instructional machines | 1 | 2 | 3 | 4 | 5 |
| c. prescribing instructional strategies | 1 | 2 | 3 | 4 | 5 |
| d. maintaining a computerized instructional management system | 1 | 2 | 3 | 4 | 5 |
| e. implementing the overall program | 1 | 2 | 3 | 4 | 5 |
| 3. (To be completed by middle school teachers only) | | | | | |
| The services provided with the toll-free telephone number have been valuable to me in | | | | | |
| a. learning to use the instructional machines | 1 | 2 | 3 | 4 | 5 |
| b. instructing pupils in using the instructional machines | 1 | 2 | 3 | 4 | 5 |
| c. prescribing instructional strategies | 1 | 2 | 3 | 4 | 5 |
| d. maintaining a computerized instructional management system | 1 | 2 | 3 | 4 | 5 |
| e. implementing the overall program | 1 | 2 | 3 | 4 | 5 |

| | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 4. Instructions and explanations from printed materials furnished by the company have been valuable to me in | | | | | |
| a. learning to use the instructional machines | 1 | 2 | 3 | 4 | 5 |
| b. instructing pupils in using the instructional machines | 1 | 2 | 3 | 4 | 5 |
| c. prescribing instructional strategies | 1 | 2 | 3 | 4 | 5 |
| d. maintaining a computerized instructional management system | 1 | 2 | 3 | 4 | 5 |
| e. implementing the overall program | 1 | 2 | 3 | 4 | 5 |
| 5. The overall inservice training has been valuable to me in | | | | | |
| a. learning to use the instructional machines | 1 | 2 | 3 | 4 | 5 |
| b. instructing pupils in using the instructional machines | 1 | 2 | 3 | 4 | 5 |
| c. prescribing instructional strategies | 1 | 2 | 3 | 4 | 5 |
| d. maintaining a computerized instructional management system | 1 | 2 | 3 | 4 | 5 |
| e. implementing the overall program | 1 | 2 | 3 | 4 | 5 |

6. Please indicate any aspect or procedure of inservice that you considered most helpful this year.

7. Please indicate any aspect or procedure of inservice that you considered least beneficial this year.

8. Please indicate any suggestions you may have to further improve the inservice process for teachers using computers in their programs.

ES 4/83

## [illegible] PRETEST OBSERVATION SCALE

Observer _____ School _____ Date _____

Time of Day _____ Day of Week _____ Number of Students _____

Program _____ Grade _____ Test _____

### Testing Environment

Use the following key to rate the conditions of the testing environment.

VG = Very Good
G = Good
A = Acceptable
P = Poor
VP = Very Poor

| | | | | | |
|---|---|---|---|---|---|
| Lighting in the testing area | VG | G | A | P | VP |
| Space for each student | VG | G | A | P | VP |
| Sound or noise level | VG | G | A | P | VP |
| Temperature | VG | G | A | P | VP |

Type of Room: Classroom____ Library____ Lunchroom____

Other _____

### Test Directions

How were the directions given? Read by Proctor____ Written on the Board____

Other _____

| | | | | | |
|---|---|---|---|---|---|
| 1. Audibleness of the instructions | VG | G | A | P | VP |
| 2. Extent to which proctor provided for students' questions | VG | G | A | P | VP |
| 3. The clarity of proctor(s) answers to students' questions | VG | G | A | P | VP |
| 4. Clarity of directions for marking answer | VG | G | A | P | VP |
| 5. Extent to which proctor followed directions in the examiner's manual | VG | G | A | P | VP |
| 6. Attitude of the proctor toward the testing process | VG | G | A | P | VP |
| 7. Accuracy of the procedure for timing the test | VG | G | A | P | VP |

## CHAPTER 1 AND DPPF TESTING OBSERVATION SCALE

Observer_____ School_____ Date_____

Time of Day_____ Day of Week_____ Number of Students_____

Program_____ Grade_____ Test_____

### Testing Environment

Use the following key to rate the conditions of the testing environment.

VG = Very Good
G = Good
A = Acceptable
P = Poor
VP = Very Poor

| | | | | | |
|---|---|---|---|---|---|
| Lighting in the testing area | VG | G | A | P | VP |
| Space for each student | VG | G | A | P | VP |
| Sound or noise level | VG | G | A | P | VP |
| Temperature | VG | G | A | P | VP |

Type of Room: Classroom_____ Library_____ Lunchroom_____

Other_____

### Test Directions

How were the directions given? Read by Proctor_____ Written on the Board_____

Other_____

| | | | | | |
|---|---|---|---|---|---|
| 1. Audibleness of the instructions | VG | G | A | P | VP |
| 2. Extent to which proctor provided for students' questions | VG | G | A | P | VP |
| 3. The clarity of proctor(s) answers to students' questions | VG | G | A | P | VP |
| 4. Clarity of directions for marking answer | VG | G | A | P | VP |
| 5. Extent to which proctor followed directions in the examiner's manual | VG | G | A | P | VP |
| 6. Attitude of the proctor toward the testing process | VG | G | A | P | VP |
| 7. Accuracy of the procedure for timing the test | VG | G | A | P | VP |

# QUESTIONS FOR PLL LABS

Are kids getting accustomed to using computer?

Do they seem to be learning more?

Have you noticed any change in attendance since kids started using computer?

Have there been any technical difficulties with the system? - If so, have these been worked out satisfactorily?

Have you been satisfied with the services provided by the consultant?

Are you satisfied with the diagnosis and prescription as provided by the computer?

How many minutes per week is average kid on the computer?

# COLUMBUS PUBLIC SCHOOLS - Columbus, Ohio PUPIL CENSUS FORM

LAST NAME _____ FIRST NAME _____ M I _____ SEX _____ TEACHER NUMBER _____

SCHOOL _____ H R _____ GRADE _____

**USE A NUMBER 2 PENCIL. ERASE COMPLETELY WHEN MAKING CORRECTIONS.**

| TEACHER NUMBER | PROGRAM CODE |
|---|---|
| | |

| STUDENT | SCHOOL | GRADE | SEX |
|---|---|---|---|
| | | | |

MALE ○

FEMALE ○

| TOTAL DAYS OF PROGRAM ENROLLMENT | TOTAL DAYS OF PROGRAM ATTENDANCE | HOURS OF INSTRUCTION PER WEEK |
|---|---|---|
| 1 2 3 | 4 5 6 | |
| | | |

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