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ABSTRACT

The Mathematics Improvement Component (MIC) was implemented in the Columbus (Ohio) Public Schools to improve the skills and achievement levels of pupils who were low achievers in mathematics. Three programs comprised MIC: the Elementary Program, the Middle School Program, and the Middle School Pilot Program. In the first two (the non-pilot) programs, selected pupils were served in computer-assisted-instruction (CAI) labs. The MIC-CAI programs served 661 pupils in grades three through seven for an average of 3.6 hours of instruction per week. Analysis of the Comprehensive Tests of Basic Skills (CTBS) total mathematics scores indicated an average growth of 16.6 normal curve equivalent (NCE) points for the 5.7 month instructional period. The amount of NCE change varied inversely with grade level. The MIC-Pilot program served 810 pupils in grades three through eight for an average of 1.4 hours of instruction per week. Analysis of the CTBS total mathematics scores indicated an average growth of 17.0 NCE points for the same 5.7 month period. Three inservice meetings were rated highly by program teachers. Recommendations for each program were suggested. Tables and instruments are provided in the appendices. (YP)

Education Consolidation and Improvement Act - Chapter 1

FINAL EVALUATION REPORT
MATHEMATICS IMPROVEMENT COMPONENT:
ELEMENTARY PROGRAM, MIDDLE SCHOOL PROGRAM, AND PILOT PROGRAM

July 1989

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Education Consolidation and Improvement Act - Chapter 1

FINAL EVALUATION REPORT
MATHEMATICS IMPROVEMENT COMPONENT:
ELEMENTARY PROGRAM, MIDDLE SCHOOL PROGRAM,
AND PILOT PROGRAM
1988-89

ABSTRACT

Program Descriptions: The Mathematics Improvement Component (MIC) was first implemented in the Columbus Public Schools in 1987-88 to improve the skills and achievement levels of pupils who were low achievers in mathematics. In 1988-89 MIC was in its second year of operation.

Three programs comprised MIC: the Elementary Program, the Middle School Program, and the Pilot Program (elementary and middle school components). In the first two (nonpilot) programs, selected pupils were served in computer-assisted-instruction (CAI) labs. The MIC-CAI program teachers provided individual and small-group instruction according to pupil needs. Selected pupils normally were served in groups of 8 for approximately 40 minutes per day for the entire school year. In the MIC-Pilot program selected pupils were allowed to move in and out of the program as needed. Need was determined by pupil performance on formative tests administered at the end of each chapter by the classroom teacher. Intervention followed. The MIC-Pilot program teachers used a variety of instructional methods. Pupils were periodically retested on the Columbus Course of Study (COS) objectives that were not mastered on the classroom chapter test. MIC-Pilot pupils initially were to be served in groups of 5 for approximately two 40-minute classes in a six-school-day cycle. In actual practice most MIC-Pilot pupils were served an average of 2 class periods in a five-school-day cycle.

In 1988-89 the MIC-CAI programs served 20 elementary schools and 2 middle schools. The MIC-pilot program served 5 elementary schools and 8 middle schools.

Time Intervals: For evaluation purposes the MIC programs started on October 3, 1988 and continued through April 7, 1989. This interval of time gave 114 days of possible program instruction. For the two MIC-CAI programs, pupils included in the final pretest-posttest analyses must have attended at least 91 days (80%) of the 114 day period. For the MIC-Pilot program, pupils must have been enrolled for a minimum of 15 days and attended at least 80% of their instructional days. The number of enrollment days and instructional days varied from pupil to pupil in the MIC-Pilot program.

Activities: Implementation of the MIC programs was accomplished through instructional activities to strengthen and extend regular classroom instruction. Instructional techniques and materials based on skill-centered objectives and coordinated with the Columbus Course of Study (COS) objectives were designed to fit individual pupil needs.

Achievement Objectives: For the MIC-CAI programs, the average mathematics growth for the pupils who attended the program at least 80% of the instructional period will be 1.0 normal curve equivalent (NCE) point for each month of instruction. For the MIC-Pilot program, the average mathematics growth for pupils who were enrolled at least 15 days and who attended the program at least 80% of their instructional time will be 1.0 normal curve equivalent (NCE) point for each month of program. Growth will be measured by a nationally standardized achievement test of mathematics.

Evaluation Design: The major evaluation effort was accomplished through the administration and analyses of the two mathematics subtests of the Comprehensive Tests of Basic Skills (CTBS, 1981). Analyses of pretest-posttest achievement data were primarily in terms of NCE points. Locally-developed forms were used to collect pupil census, teacher census, parent involvement, and inservice evaluation information for the three MIC programs. In addition, computer census information was collected for the two MIC-CAI programs.

Major Findings/Recommendations: Major findings and recommendations are presented separately for the MIC-CAI programs and the MIC-Pilot program.

MIC-CAI programs. Analyses of pupil census data indicated that the MIC-CAI programs served 661 pupils in grades 3-7 for an average of 3.6 hours of instruction per week. Of the 661 pupils, 619 were in elementary schools and 42 were in middle schools. The average daily membership in the programs was 544.4 pupils. The average days of enrollment per pupil was 93.9 days and the average attendance per pupil was 85.3 days. The average number of pupils served during the school year by each half-time MIC-CAI teacher was 27.5.

The attendance criterion was met by 404 pupils, which was 61.1% of the 661 pupils served. The evaluation sample consisted of the 356 pupils in grades 3-7 who met the attendance criterion, took the pretest and posttest, and were English-speaking. This number represented 53.9% of the 661 pupils served.

Analyses of the CTBS Total Mathematics scores indicated an average growth of 16.6 NCE points for the 5.7 month instructional period between pretest and posttest, or 2.9 NCE points per month of instruction. The average growth in the MIC-CAI programs, and in each grade level in the evaluation sample, exceeded the achievement objective of 1.0 NCE point for each month of instruction. The amount of NCE change varied inversely with grade level except that the amount of change in grade 6 was less than the change in grade 7.

The information on the Teacher Census Forms indicated that the MIC-CAI programs were staffed with 24 teachers. All 24 teachers served half-time in a MIC-CAI program (12.0 FTEs) and half-time in a CLEAR-CAI (reading) program.

Analyses of parent involvement data indicated a total of 1140.4 contacts during the school year with 480 different parents of program pupils. The number of contacts and hours varied by month. Individual parent conferences accounted for more parent contacts than any other activity.

The three inservice meetings were rated highly by program teachers on the Inservice Evaluation Forms. The average ratings for the four inservice statements ranged from 4.7 to 4.8 on a 5-point scale.

The information collected on the Computer Census Forms indicated that most of the 22 elementary school CAI labs were equipped with Apple microcomputers serviced by the Prescription Learning Company. The two middle school CAI labs had different equipment. On the average, pupils spent 44.5% of their program instructional time at the computers. This average was much higher for the two elementary labs that had Computer Curriculum Corporation (CCC) computers than for the majority of labs as described above.

Based on evaluation results, it is strongly recommended that the MIC-CAI programs be continued during the 1989-90 school year. It is further recommended that: (a) variations in program implementation (e.g., instructional methods, computer equipment, percent of pupil time at the computers) be studied across schools to determine ways of further improving program effectiveness and

efficiency; (b) because larger NCE gains were made in the other grade levels, efforts be made to improve the NCE growth in grade 6, even though the 1988-89 average NCE growth per month of instruction in grade 6 exceeded the achievement objective; and (c) comparisons of pupil performance in the MIC-CAI programs versus pupil performance in the MIC-Pilot program be made in the future. Such comparisons are currently problematic because the programs differ on a number of variables. It would be difficult to attribute differences in performance to any specific variable(s). Staff members should be encouraged to review and suggest modifications in the proposed ECIA Chapter 1 MIC program design to enable valid comparisons of pupil performance.

MIC-Pilot program. Analyses of pupil census data indicated that the MIC-Pilot program served 810 pupils in grades 3-8 for an average of 1.4 hours of instruction per week. The average daily membership in the program was 670.6 pupils. The average days of enrollment per pupil was 94.4 days and the average attendance per pupil was 29.9 days. The average number of pupils served during the school year by each full-time MIC-Pilot teacher was 67.5.

The enrollment and attendance criteria were met by 507 pupils, which was 62.6% of the 810 pupils served. The evaluation sample consisted of the 431 pupils in grades 3-8 who met the enrollment and attendance criteria, took the pretest and posttest, and were English-speaking. This number represented 53.2% of the 810 pupils served.

Analyses of the CTBS Total Mathematics scores indicated an average growth of 17.0 NCE points for the 5.7 month instructional period between pretest and posttest, or 3.0 NCE points per month of instruction. The average growth in the MIC-Pilot program, and in each grade level except grade 8, exceeded the achievement objective of 1.0 NCE point for each month of instruction. The amount of growth in grade 8 was much less than for each of the other grade levels.

The information on the Teacher Census Forms indicated that the program was staffed with 12 teachers. All served full-time in the program.

Analyses of parent involvement data indicated a total of 879.0 contacts during the school year with 416 different parents of program pupils. The number of contacts and hours varied by month. Individual parent conferences accounted for more parent contacts than any other activity.

The three inservice meetings were rated highly by program teachers on the Inservice Evaluation Forms. The average ratings for the four inservice statements ranged from 4.6 to 4.8 on a 5-point scale.

Based on evaluation results, it is strongly recommended that the MIC-Pilot program be continued during the 1989-90 school year. It is further recommended that: (a) the designated service delivery pattern of 2 class periods in a six-school-day cycle be reconsidered and possibly be revised; (b) variations in program implementation (e.g., selection procedures, service delivery patterns, instructional methods, communication with classroom teachers, testing procedures) be studied across schools to determine ways of further improving program effectiveness and efficiency; (c) in 1989-90 efforts be made to improve the NCE growth in grade 8 to achieve (or even exceed) the evaluation objective; (d) the movement in and out of the program be determined; and (e) comparisons of pupil performance in the MIC-Pilot program versus pupil performance in the MIC-CAI programs be made in the future. [See recommendation c (above) for the MIC-CAI programs.]

Education Consolidation and Improvement Act - Chapter 1

FINAL EVALUATION REPORT
MATHEMATICS IMPROVEMENT COMPONENT:
ELEMENTARY PROGRAM, MIDDLE SCHOOL PROGRAM,
AND PILOT PROGRAM

July 1989

Program Descriptions

The Mathematics Improvement Component (MIC) was first implemented in the Columbus Public Schools in 1987-88 to assist elementary and middle school pupils who were low achievers in mathematics. In 1988-89 MIC was in its second year of operation. The overall purpose of MIC was to improve the mathematics skills and levels of achievement of pupils selected for service in priority schools.

Funding for MIC was provided by Chapter 1 of the Education Consolidation and Improvement Act (ECIA). Prior to MIC, the Basic Math Improvement Program (BMIP) operated in the Columbus Public Schools from 1966 to 1982 with funding from Title I of the Elementary and Secondary Education Act.

Three programs comprised the 1988-89 Mathematics Improvement Component: the Elementary Program, the Middle School Program, and the Pilot Program (elementary and middle school components). In the first two (nonpilot) programs, selected pupils were served daily in computer-assisted-instruction (CAI) labs. The MIC-CAI program teachers delivered individual and small-group instruction, and pupils normally were served for the entire school year. In the MIC-Pilot program a variety of instructional methods was used. Pupils selected for service in the pilot program were allowed to move in and out of the program as needed during the school year. Instruction was provided during an average of two class periods in a five or six-school-day cycle.

All three MIC programs included ongoing diagnosis of mathematics problems and assessment of pupil progress based on the cooperative efforts of the program teacher and the classroom teacher. Program planning was accomplished in cooperation with the mathematics personnel of the school district. Instruction was coordinated with the pupil's regular classroom teacher and the Columbus Course of Study (COS). The MIC teachers received support from a full-time program coordinator and inservice meetings.

In 1988-89 the MIC programs were located in a total of 35 schools — 25 elementary schools and 10 middle schools. Of these, the MIC-CAI programs served a total of 22 schools, 20 at the elementary level and 2 at the middle school level. The MIC-Pilot program served a total of 13 schools, 5 at the elementary level and 8 at the middle school level. The elementary school component of the MIC-Pilot program was a new feature in 1988-89.

In this report the two computer-assisted-instruction programs (MIC-CAI) generally are treated as one and are discussed separately from the pilot program (MIC-Pilot). However, the MIC programs are treated as a whole for the purpose of discussing certain features that are common to all three programs (e.g., aspects of the evaluation design). The MIC programs are described in more detail below.

Elementary and Middle School Programs (MIC-CAI)

Each MIC-CAI program teacher was located in a computer-assisted-instruction (CAI) lab equipped with microcomputers or minicomputers. The teacher was provided instructional materials, software, and a computer-management system. An instructional aide generally was assigned to each elementary lab. Instruction was individualized to meet the needs of each pupil.

The lab was used approximately a half-day each for the MIC-CAI program and the Compensatory Language Experiences and Reading (CLEAR-CAI) program. The teacher served half-time in each program. Evaluation of the CLEAR-CAI program is available in a separate report (Lore & Chamberlain, 1989).

Selected pupils normally received instruction in groups of 8 for approximately 40 minutes per school day for the entire school year. According to the program guidelines, each teacher could serve a maximum of 28 pupils during the half-day the lab was used for MIC-CAI instruction. Scheduling arrangements may have varied from school to school. In one middle school no pupils were enrolled in the MIC-CAI program until November 1, 1988.

In 1988-89 the Elementary and Middle School Programs (MIC-CAI) served selected pupils in grades 3-7 in a total of 22 buildings. Of the 22 buildings, 20 were elementary schools and 2 were middle schools. Program staff consisted of 24 teachers. With the exception of 2 elementary schools, each building was staffed by 1 program teacher. Two elementary schools were each staffed by 2 program teachers.

Pilot Program (MIC-Pilot)

A key feature of the MIC-Pilot program was the flexibility to move selected pupils in and out of the program as needed during the year. Need was determined by pupil performance on formative tests administered at the end of each chapter by the classroom teacher. The tests were designed by a team of classroom teachers to reflect the textbook and the Columbus Course of Study (COS) objectives. Intervention followed the formative assessment. After pupils received instruction they were retested periodically on the COS objectives that were not mastered on the classroom chapter test.

According to the program guidelines, pupils were to receive instruction in groups of 5 for approximately two 40-minute classes in a six-school-day cycle. Approximately 25 students were to be served during 5 periods per day by each MIC-Pilot teacher, for a total of approximately 60 pupils in each classroom.

In actual practice the designated service delivery pattern of 2 class periods in a six-school-day cycle was implemented in only 1 school because the teachers found it to be unfeasible. Data collected from informal discussions with MIC-Pilot teachers indicated that the six-day cycle was complicated to schedule, difficult to keep track of, and confusing for classroom teachers and pupils. One school used a service pattern of 4 class periods in a twelve-school-day cycle. With this pattern, instruction was provided on 4 consecutive school days, followed by no instruction during the next 8 school days. In the other schools the service pattern consisted of 2 class periods in a five-school-day cycle. The length of a class period varied from school to school and within schools. The shortest class period was 40 minutes and the longest was 60 minutes.

In 1988-89 the MIC-Pilot program served selected pupils in grades 3-8 in a total of 13 buildings. Originally only 12 schools were served. An extra elementary school was added in November 1988 because only a small number of pupils were eligible for the MIC-Pilot program in one of the original elementary schools. The program staff consisted of 12 full-time teachers. One teacher served both the school that had few MIC-Pilot pupils and the additional school. The other 11 teachers served 1 school each.

Evaluation Objectives

The evaluation objectives for the MIC programs were as follows:

Elementary and Middle School Programs (MIC-CAI)

The average mathematics growth for the pupils who attended the program at least 80% of the instructional period will be 1.0 normal curve equivalent (NCE) point for each month of instruction. Growth will be measured by a nationally standardized achievement test of mathematics.

Pilot Program (MIC-Pilot)

The average mathematics growth for pupils who were enrolled at least 15 days and who attended the program at least 80% of their instructional time will be 1.0 normal curve equivalent (NCE) point for each month of program. Growth will be measured by a nationally standardized achievement test of mathematics (evaluation objective as revised, April 1989).

The program time period established for evaluation purposes for all three MIC programs was 114 school days beginning October 3, 1988, and ending April 7, 1989. This time period (114 days divided by an average of 20 school days per month) is equal to 5.7 months of possible instruction. For the MIC-CAI programs, analysis of pretest-posttest performance was contingent on pupil attendance for at least 91 days (80%) of the 114 day period. For the MIC-Pilot program the analysis was contingent on pupil enrollment for a minimum of 15 days and pupil attendance for at least 80% of their instructional days. Days of enrollment in the MIC-Pilot program was counted from the day after the first Chapter test was given to qualify the pupil, through the day of the Chapter test indicating the pupil no longer needed treatment. Some MIC-Pilot pupils may have had more than one enrollment period. The number of enrollment days and instructional days varied from pupil to pupil in the MIC-Pilot program.

Evaluation Design

The evaluation design for the MIC programs provided for the collection of data in five areas of operation. The instruments used to collect the data are found in Appendix B, with the exception of the standardized achievement tests.

1. ECIA Chapter 1 Pupil Census Information

   A locally-developed Pupil Census Form (PCF) was completed by program teachers for each pupil served to provide the following information: days of program enrollment, days of program attendance, and hours of instruction per week. The form also included information regarding the pupil's grade and sex, whether or not the pupil was non-English speaking,

and whether or not the pupil left the ECIA Chapter 1 program because he or she qualified for a special education program. Also included was a question regarding the pupil's progress which required a subjective response from the program teacher. Collection of PCFs was completed in April 1989. See page 35, Appendix B, for a sample PCF.

2. Standardized Achievement Test Information

Program pupils were administered the two mathematics subtests of the Comprehensive Tests of Basic Skills (CTBS, 1981). The two subtests, Mathematics Computation, and Mathematics Concepts and Applications, yield a combined score for Total Mathematics. This test series, which is published by CTB/McGraw-Hill, has empirical norms for fall and spring, established October 6-10, 1980, and April 27 to May 1, 1981. The forms, subtests, and test levels used for each grade level are listed below.

		Pretest			Posttest		
Grade	Test	Form	Level	Subtest	Form	Level	Subtest
3	CTBS	U	E	Total Mathematics	V	E	Total Mathematics
4	CTBS	U	F	Total Mathematics	V	F	Total Mathematics*
5	CTBS	U	G	Total Mathematics	V	G	Total Mathematics
6	CTBS	U	G	Total Mathematics	V	G	Total Mathematics
7	CTBS	U	H	Total Mathematics	V	H	Total Mathematics*
8	CTBS	U	H	Total Mathematics	V	H	Total Mathematics

Note. Total Mathematics was comprised of two subtests: Mathematics Computation, and Mathematics Concepts and Applications.

*Estimated by administration of customized Form V

All testing was done on level. At posttest time, grades 4 and 7 were administered customized tests that provided norm-referenced as well as criterion-referenced scores. The customized tests were developed by Columbus Public Schools personnel in cooperation with CTB/McGraw Hill to match the Columbus Public Schools Graded Course of Study (COS).

The achievement tests were administered as follows: Program teachers in grades 3-8 normally administered the pretest except in schools where Schoolwide Testing occurred. Posttests for grades 3-8 were administered as part of Districtwide Testing. During Schoolwide or Districtwide Testing, tests were administered by classroom teachers with program teachers serving as proctors. Pretesting occurred during the week of September 26-30, 1988; posttesting occurred during April 10-14, 1989.

3. ECIA Chapter 1 Teacher Census Information

The locally-developed Teacher Census Form was designed to provide information regarding characteristics of program personnel. The collected information included the total number of years of teaching experience, the number of years of Title I/Chapter 1 teaching experience, and the highest college degree received. The form was completed by Chapter 1 program teachers in September 1988. A copy of the Teacher Census Form can be found on pages 36-37 of Appendix B.

4. Parent Involvement Information

The Parent Involvement Survey was constructed locally to collect data on the nature and level of parent involvement in ECIA Chapter 1 programs. Program teachers reported data on a monthly basis, September 1988 through June 1989, and at the end of the school year. Monthly data included the number of program parents involved in five categories of parent involvement, the total number of hours that program parents were involved, and a monthly unduplicated count of the number of program parents involved. End-of-school-year data included an annual unduplicated count of the number of program parents involved, an estimate of the number of nonprogram parents involved in the five categories of parent involvement, and the total number of hours that nonprogram parents were involved. A copy of the Parent Involvement Survey can be found on pages 38-40 of Appendix B.

5. Inservice Evaluation Information

The locally-developed General Inservice Evaluation Form was designed to obtain the teacher's perceptions regarding the effectiveness of each inservice meeting and to provide feedback to program administrators. The form was distributed to participants at the close of inservice sessions held for Chapter 1 staff members. A modified version of the form, located on pages 41-42, Appendix B, was used for the Opening Conference for Chapter 1 teachers on September 6, 1988. Dates and topics of the Chapter 1 inservice meetings for MIC teachers are shown in Table 1. Teachers completed the inservice evaluation forms for all of the inservice meetings. A copy of the General Inservice Evaluation Form can be found on page 43 of Appendix B.

Teachers jointly serving in a MIC-CAI (mathematics) program and a CLEAR-CAI (reading) program participated in other Chapter 1 inservice meetings pertaining to reading, computers, and related topics. Dates and topics of these sessions are not included in this report but are contained in the final evaluation report for the CLEAR Program (Lore & Chamberlain, 1989).

MIC-Pilot teachers participated in other inservice activities that were informal planning meetings and/or work sessions conducted by the program coordinator. These meetings were not evaluated by the Department of Evaluation Services.

6. Computer Census Information

In addition to the five kinds of data specified in the evaluation design, information on computer usage was obtained for the MIC-CAI programs. The locally-constructed questionnaire, informally referred to as the Computer Census Form, served two purposes: to delineate and describe the various computer systems used in all CAI labs, and to determine the percent of program time that pupils worked at the computers in the different computer systems. Data collected from this instrument have been summarized in an interim evaluation report (Chamberlain, 1989). Portions of the data pertaining to the MIC-CAI programs are also included in this report. A copy of the Computer Census Form can be found on page 44 of Appendix B.

Table 1

Program Teacher Participation in MIC Inservice Meetings
by Date and Topic
1988-89

Date	Title of Inservice	Program		
		Elementary MIC-CAI	Middle School MIC-CAI	MIC-Pilot (Elementary and Middle School)
September 6	Opening Conference for Chapter 1 Teachers	X	X	X
September 14 (Morning)	Components of the Math Competency Based Education Program	X	X	X
September 14 (Afternoon)	Group Meetings - Review of Manipulatives, Selected Software, etc.			X
February 2	A Menu of Math Activities	X	X	X
Total		3	3	3[a]

[a]For evaluation purposes the two sessions held for MIC-Pilot teachers on September 14 were treated as one meeting.

Major Findings

Elementary and Middle School Programs (MIC-CAI)

Pupils were selected for the MIC-CAI programs on the basis of previous achievement test scores which indicated they were achieving at or below the 36th percentile in mathematics skills. Selection testing occurred prior to the program pretest.

Pupil Census Information. During the 1988-89 school year the MIC-CAI programs served a total of 661 pupils in grades 3-7. Of the 661 pupils, 619 were in the elementary program (grades 3-5) and 42 were in the middle school program (grades 6-7).

Overall, the average number of hours of instruction per pupil per week was 3.6 hours. The average hours of instruction varied by grade level and ranged from 3.4 hours for grade 6, to 3.8 hours for grade 3. The average hours of instruction also varied from pupil to pupil. Among elementary pupils the average weekly instructional time ranged from 2.4 to 5.0 hours. Among middle school pupils the time ranged from 3.3 to 3.5 hours.

The average daily membership in the MIC-CAI programs was 544.4 pupils. The average days of enrollment per pupil was 93.9 days, and the average attendance per pupil was 85.3 days. The average number of pupils served during the school year per teacher by the 24 half-time MIC-CAI teachers was 27.5, although the average number of pupils enrolled per teacher on any given day was 22.7 (average daily membership divided by 24 teachers). The attendance criterion was met by 404 pupils, or 61.1% of all program enrollees. Within grade levels the percentages of pupils served who met the attendance criterion ranged from 48.6% in grade 6 to 85.7% in grade 7. Data pertaining to enrollment and attendance are presented in Table 2.

The evaluation sample was limited to those pupils who were English-speaking, had both pretest and posttest administrations of the standardized achievement test, and met the attendance criterion of at least 80% (91 days) of the 114 program days. Of the 661 pupils served, 1 (0.2%) was non-English speaking and therefore was excluded from the evaluation sample. An additional 304 pupils were excluded from the evaluation sample due to incomplete test data and/or nonattainment of the attendance criterion. Of the 304 pupils, 48 were lacking only the test data, 156 had complete test data but did not have the 80% attendance, and 100 pupils were lacking both the test data and the 80% attendance. The evaluation sample was comprised of the remaining 356 pupils in grades 3-7, which was 53.9% of the 661 pupils served. The percentages of pupils served in each grade level who were in the evaluation sample ranged from 14.3% in grade 6 to 85.7% in grade 7. Data from testing are presented in Tables 3 and 4.

Pupil census information also included the teacher's judgment of individual pupil progress as much, some, little, or no progress. Of the 661 pupils served in the program 199, (30.1%) were perceived by their program teachers as making much progress, 328 (49.6%) as making some progress, 113 (17.1%) as making little progress, and 21 (3.2%) as making no progress.

Standardized Achievement Test Information. Normal curve equivalents (NCEs) are generally considered to provide the truest indication of pupil growth in achievement because they provide comparative information in equal units of measurement. Data for normal curve equivalents are presented in Table 3. The

Table 2

Number of Pupils Served; Averages for Days of Enrollment, Days of Attendance, Daily Membership, and Hours of Instruction Per Week; and Pupils Meeting Attendance Criterion for MIC-CAI Programs Reported by Grade Level 1988-89

Grade	Pupils Served	Girls	Boys	Average Days of Enrollment	Average Days of Attendance	Average Daily Membership	Average Hours of Instruction per Pupil per Week	Pupils Meeting Attendance Criterion
3	132	67	65	92.4	85.1	107.0	3.8	89
4	242	107	135	91.5	83.7	194.2	3.6	145
5	245	127	118	97.7	87.4	209.9	3.7	147
6	35	13	22	89.6	80.9	27.5	3.4	17
7	7	7	0	93.9	89.1	5.8	3.5	6
Total	661	321	340	93.9	85.3	544.4	3.6	404

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12/21/89

Table 3

Minimum, Maximum, Average, and Standard Deviation of the Pretest and Posttest Normal Curve Equivalents (NCE) for MIC-CAI Programs Reported by Grade Level
1988-89

Grade	Number of Pupils	Pretest				Posttest				Average NCE Change[a]
		Min.	Max.	Average NCE	Standard Deviation	Min.	Max.	Average NCE	Standard Deviation	
3	85	1.0	53.0	23.1	12.8	1.0	95.0	46.1	20.6	23.0
4	128	5.0	57.0	25.7	13.2	1.0	99.0	43.0	15.7	17.2
5	132	8.0	57.0	32.8	11.1	5.0	85.0	45.1	14.9	12.4
6	5	4.0	35.0	26.4	13.2	16.0	48.0	35.2	13.1	8.8
7	6	10.0	35.0	25.3	10.0	24.0	47.0	37.3	8.1	12.0
Total	356			27.7	12.9			44.3	16.6	16.6

[a]In the 5.7 month instructional period between pretest and posttest.

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12/21/89

average NCE change from pretest to posttest for the MIC-CAI programs was 16.6 NCE points. The average NCE change per month in the 5.7 month instructional period between pretest and posttest was 2.9 NCE points, which exceeded the evaluation objective for mathematics of 1.0 NCE point for each month of instruction. Moreover, the evaluation objective was exceeded in each grade level represented in the evaluation sample. The average amount of change varied inversely with grade level except that the amount of change in grade 6 was less than the change in grade 7. The grade level averages for mathematics growth ranged from 23.0 NCE points overall, or 4.0 NCE points per month in grade 3; to 8.8 NCE points overall, or 1.5 NCE points per month in grade 6 (see Table 3).

It should be kept in mind that NCEs are based on percentiles, which compare the pupil's performance in relation to the general population. No change in NCE score from pretest to posttest does not denote a lack of absolute progress; on the contrary it means that over the school year the pupil has progressed at the expected rate of growth and has maintained the same relative position in terms of the general population. Even a small gain in NCEs indicates an advancement from the pupil's original position relative to the general population. For readers interested in percentile and grade equivalent statistics, see Tables A-1 and A-2 in Appendix A.

Table 4 contains data related to the changes in NCE scores for the three ranges: (a) no improvement in NCE scores (0.0 or less), (b) some improvement in NCE scores (0.1 to 6.9), and (c) substantial improvement in NCE scores (7.0 or more). The data indicate that 302 pupils (84.8%) made gains in NCE scores. This means that 84.8% of the pupils in the evaluation sample progressed at a rate that was greater than expected for them. More specifically, 259 pupils (72.8%) made substantial improvement; 43 pupils (12.1%) made some improvement; and 54 pupils (15.2%) made no improvement.

ECIA Chapter 1 Teacher Census Information. Teacher Census Forms were completed in September 1988 by the 24 teachers assigned to the MIC-CAI programs. All 24 program teachers were full-time employees of the Columbus Public Schools serving half-time in a MIC-CAI (mathematics) program and half-time in a CLEAR-CAI (reading) program. Of the 24 teachers, 22 were assigned to elementary schools and 2 were assigned to middle schools. Thus, in terms of full-time equivalence (FTE) the program was staffed with 12.0 teachers, 11.0 FTEs in elementary schools and 1.0 FTE in middle schools. All teachers had at least a bachelor's degree and 17 teachers (70.8%) had a master's degree. The average number of years of teaching experience was 20.9 overall, and 10.7 years in Title I/Chapter 1.

Parent Involvement Information. The Parent Involvement Form provided information from teachers at the end of each month (September 1988 through June 1989) concerning program activities involving parents who had children in the program. These data are presented by month in Table 5. Because teachers served pupils in both the MIC-CAI and the CLEAR-CAI programs, parent involvement data had to be prorated between the two programs. This accounts for the fractional "Number of Parents" encountered in Table 5. The data were prorated based on the number of full-time equivalent (FTE) teachers in each program. The months showing the most and least parent involvement were October, with a total of 243.5 contacts in 160.6 parent hours, and December, with a total of 64.9 contacts in 65.3 parent hours.

Table 4

Number and Percent of Pupils in Change Categories for NCE Scores for MIC-CAI Programs Reported by Grade Level 1988-89

	Change Categories for NCE Scores			
	No Improvement (0.0 or less)	Some Improvement (0.1 to 6.9)	Substantial Improvement (7.0 or more)	Total Pupils in Sample
Grade 3				
Number of Pupils	7	7	71	85
% of Pupils	8.2%	8.2%	83.5%	23.9%
Grade 4				
Number of Pupils	15	14	99	128
% of Pupils	11.7%	10.9%	77.3%	36.0%
Grade 5				
Number of Pupils	30	20	82	132
% of Pupils	22.7%	15.2%	62.1%	37.1%
Grade 6				
Number of Pupils	2	0	3	5
% of Pupils	40.0%	0.0%	60.0%	1.4%
Grade 7				
Number of Pupils	0	2	4	6
% of Pupils	0.0%	33.3%	66.7%	1.7%
Total Group				
Number of Pupils	54	43	259	356
% of Pupils	15.2%	12.1%	72.8%	100.1%[a]

[a]Due to rounding

SRVCS/P514/RPTFMIC89
1/89

Table 5

Number of Parents Involved and Total Parent Hours
for MIC-CAI Programs Reported by Month
1988-89

Program Activities	Months										Totals for Year
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1. Parents involved in the planning, operation and/or evaluation of your unit											
Number of Parents	11.6	17.4	5.5	3.0	6.6	3.4	3.9	4.5	3.9	3.6	63.3
Total Parent Hours	10.0	8.2	5.3	2.8	4.2	2.4	2.7	4.2	14.0	7.1	60.9
2. Group meetings for parents											
Number of Parents	59.9	102.1	20.6	20.6	7.1	39.1	20.0	27.0	53.1	23.8	409.4
Total Parent Hours	75.5	97.4	20.0	45.8	7.9	57.6	26.5	42.0	94.0	30.1	496.9
3. Individual parent conferences											
Number of Parents	60.1	49.2	103.4	27.0	40.5	86.9	33.9	36.4	38.6	29.9	505.8
Total Parent Hours	15.5	12.3	49.7	7.5	13.3	38.3	16.2	14.0	15.4	7.8	191.0
4. Parental classroom visits or field trips											
Number of Parents	17.2	72.0	14.3	12.3	15.2	13.3	8.9	11.5	8.1	7.5	180.4
Total Parent Hours	7.0	41.9	6.4	8.5	9.0	8.9	5.7	10.1	8.7	9.1	115.3
5. Visits by teacher to parents' homes											
Number of Parents	3.6	2.8	0.3	2.0	1.7	1.2	2.0	1.6	2.0	0.4	17.5
Total Parent Hours	1.2	0.8	0.2	0.8	0.7	0.8	1.4	0.6	1.0	0.4	7.8
Total Parent Contacts	152.4	243.5	144.0	64.9	71.1	144.0	68.7	81.0	105.7	65.2	1140.4
Total Parent Hours	109.2	160.6	81.5	65.3	35.1	108.0	52.5	70.9	133.1	54.6	870.9

Note. Data were prorated between the MIC-CAI and CLEAR-CAI Programs based on program teacher full-time equivalence (FTE).

Individual parent conferences accounted for more parent contacts (505.8) than any other activity. Yearly totals for the other activities were: group meetings with parents, 409.4 contacts in 496.9 parent hours; parent classroom visits or field trips, 180.4 contacts in 115.3 parent hours; planning, operation, and/or evaluation, 63.3 contacts in 60.9 parent hours; and visits by the teacher to parents' homes, 17.5 contacts in 7.8 parent hours. The yearly totals for all five types of parent activity were 1140.4 parent contacts in 870.9 parent hours. Because a parent could have involvement in more than one contact, a yearly unduplicated count was also obtained from program teachers in June. This count indicated a total of 480 different parents of program pupils had one or more contacts with the program during the school year.

A separate end-of-the-year teacher survey was used to determine program involvement by nonprogram parents. This survey indicated that during the school year approximately 106.6 additional parents who did not have children in the program were involved in 130.8 contacts with the program in 112.5 parent hours.

Inservice Evaluation Information. The General Inservice Evaluation Form was completed by the MIC-CAI teachers for the three inservice meetings which occurred from September 1988 through May 1989. The number of inservice meetings was greater than the minimum of two meetings that was specified in the program guidelines. All three of the mathematics inservice meetings were attended by both elementary and middle school MIC-CAI teachers (see Table 1). Participants were asked after each session to rate four statements about the inservice using a 5-point scale which ranged from Strongly Agree (5) to Strongly Disagree (1). A copy of the General Inservice Evaluation Form is located on page 43 of Appendix B.

Workshop participants generally gave the Chapter 1 inservice meetings high ratings. The average ratings for the four inservice statements ranged from 4.7 to 4.8 on the 5-point scale. Overall ratings by participants are summarized in Table 6.

Open-ended questions on the General Inservice Evaluation Form asked participants to comment about the most and least valuable parts of the meetings, and about additional information or topics they would like to have covered in future meetings. Only those open-ended comments which were made by 4 or more participants at any single session are summarized here. However, the evaluation reports on individual sessions have been submitted to the Department of Federal and State Programs and are available on request.

Two items were identified by 4 or more MIC-CAI teachers as being the most valuable parts of the inservice meetings. The first was the handouts/materials sesson on the Math Competency Based Education Program. Specific comments about the handouts/materials referred to the following: handouts to complement the COS, NRT, and CRT; materials on the CBE program; materials on how to relate to the Course of Study; and available reports. The second item listed as most valuable was "all" parts of the Menu of Math Activities session. Specific comments about this meeting included the following: all of it was excellent and most helpful, very enriching and useful, all the great ideas, it was an excellent workshop.

Two topics were listed by 4 or more teachers as being the least valuable parts of the inservice meetings. The first was "nothing" (or not applicable) for the Math Competency Based Education session. The second topic was an Evaluation Services presentation on how to check for errors when completing add forms, which was given at the end of the Menu of Math Activities Session.

The only topic for future meetings that was suggested by 4 or more teachers was mathematics manipulatives. Suggestions included hands-on activities for students to use and a workshop on manipulatives using warehouse items.

Table 6

Number Responding, Average Response, and Percent of Response For Reactions to Inservice Statements for MIC-CAI Programs 1988-89

Statements	Number Responding	Average Response	Percent SA (5)	A (4)	U (3)	D (2)	SD (1)
1. I think this was a very worthwhile meeting.	65	4.7	73.8	24.6	1.5	0.0	0.0
2. The information presented in this meeting will assist me in my program.	64	4.7	73.4	26.6	0.0	0.0	0.0
3. There was time to ask questions pertaining to the presentation.	64	4.8	75.0	25.0	0.0	0.0	0.0
4. Questions were answered adequately.	64	4.7	70.3	28.1	1.6	0.0	0.0

Note. Ratings based on 5-point scale where SA=Strongly Agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly Disagree.

Computer Census Information. To supplement the data collection specified in the evaluation design, information was obtained from all teachers in the MIC-CAI programs by means of a Computer Census Form (Chamberlain, 1989). This questionnaire was mailed in February and was completed by all MIC-CAI teachers by March 1989. Data from the Computer Census Form are presented in Table 7. A copy of the Computer Census Form can be found on page 44 of Appendix B.

Of the 22 elementary school labs, 19 had Apple microcomputers that were serviced by the Prescription Learning Company. Prescription Learning (PL) elementary labs were each equipped with 6 Apple microcomputers, one of which was used for the teacher's in-lab management system and for hands-on testing. Additional teaching machines were also used in these labs.

One elementary school lab had the Sperry Network System and was serviced by Wasatch. This lab networked 4 Sperry microcomputers and 1 AT&T microcomputer as student stations, plus a 5th Sperry microcomputer which was limited to teacher use as a command module.

Table 7

Number of Labs, Average Pupil Time at the Computer and in the Program, and Percent Computer Time by Type of Lab for MIC-CAI Programs 1988-89

Type of Lab	Number of Labs	Average Minutes Per Week At Computer	Average Minutes Per Week In Program	Average Percent Computer Time
Elementary				
PL (Apple)	19	90.0	209.7	42.9
PL (ILA)	0	-	-	-
TRS-80	0	-	-	-
Wasatch (Tandy)	0	-	-	-
Wasatch (Sperry)	1	80.0	200.0	40.0
CCC	2	150.0	225.0	66.7
Subtotal	22	88.2	200.5	44.0
Middle School				
Dolphin	0	-	-	-
Wasatch (Sperry)	1	100.0	200.0	50.0
ESC (Tandy)	1	100.0	200.0	50.0
Wicat	0	-	-	-
Subtotal	2	100.0	200.0	50.0
Total	24	89.2	200.4	44.5

Note. Adapted from Chamberlain, 1989.

The remaining 2 elementary school labs (in one school) were serviced by the Computer Curriculum Corporation (CCC). A central CCC microhost was hooked up to the individual microcomputers in the 2 labs. Each lab had a total of 8 microcomputers for pupil use: 4 Apple and 4 Atari. In addition, each lab had a 5th Atari which was used as a teacher management system.

All of the elementary school labs that were used for MIC-CAI instruction were also used for CLEAR-CAI instruction, however, several labs were used only for CLEAR-CAI instruction. Some of the computer systems that were in the elementary school CLEAR-CAI labs were not found in the labs used for both MIC-CAI and CLEAR-CAI pupils (Chamberlain, 1989). Specifically, the Integrated Language Arts (ILA) system, serviced by The Prescription Learning Company; the Tandy TRS-80 color microcomputers, serviced by the B&B Company; and the Tandy 1000-SL microcomputers and Tandy 4000, serviced by Wasatch, were used for CLEAR-CAI but not MIC-CAI instruction.

Of the 2 middle school labs, 1 used Sperry microcomputers in combination with other equipment and was serviced by Wasatch. This lab networked 4 Sperry microcomputers, 3 Tandy microcomputers, and 1 AT&T microcomputer for a total of 8 pupil stations; plus a 5th Sperry microcomputer which was limited to teacher use as a command module.

The other middle school lab used hardware serviced by the Tandy Corporation and software serviced by the Educational Systems Corporation (ESC). This lab networked 8 Tandy 1000-SL microcomputers as pupil stations and 1 Tandy 3000 microcomputer as a teacher station, all linked to a central host.

Both of the middle school labs that were used for MIC-CAI instruction were also used for CLEAR-CAI instruction. The other labs were used only for CLEAR-CAI instruction. Some of the CLEAR-CAI labs contained equipment that was not found in the labs used for both MIC-CAI and CLEAR-CAI pupils. This equipment included Dolphin minicomputers, serviced by the B&B Company; and Wicat Systems, serviced by the Wicat Systems Company.

Overall, MIC-CAI pupils received 44.5% of their instruction at the computer stations. The average percent computer time in the elementary labs was 44.0% and in the middle school labs was 50.0%. It is notable, however, that the average percent pupil computer time was considerably greater (66.7%) for the labs equipped with the CCC computer systems. Data from observations and interviews conducted in previous years (Chamberlain, 1989) suggest that a variety of teacher-directed individual and group activities would account for the remaining program time.

Middle School Pilot Program (MIC-Pilot)

Pupils were selected for the MIC-Pilot program on the basis of previous achievement test scores which indicated they were achieving at or below the 36th percentile in mathematics skills. Selection testing occurred prior to the program pretest. Pupils were allowed to enter and exit the program at various times during the year on the basis of the objective-based mastery information provided by the Chapter tests.

Pupil Census Information. During the 1988-89 school year the MIC-Pilot program served a total of 810 pupils in grades 3-8. Of the 810 pupils, 252 were in elementary schools (grades 3-5) and 558 were in middle schools (grades 6-8).

Overall, the average number of hours of instruction per pupil per week was 1.4 hours. The averages by grade level were 1.2 hours for grade 8, and 1.4 hours for each of the other grades served. The average hours of instruction also varied from pupil to pupil. Among elementary pupils the amount of weekly instructional time ranged from 1.3 to 2.0 hours. Among middle school pupils the time ranged from 1.2 to 1.5 hours.

The average daily membership in the MIC-Pilot program was 670.6 pupils. The average days of enrollment per pupil was 94.4 days. The average attendance per pupil was 29.9 days. The average number of pupils served during the school year per teacher by the 12 MIC-Pilot teachers was 67.5, although the average number of pupils enrolled per teacher on any given day was 55.9 (average daily membership divided by 12 teachers). The enrollment and attendance criteria were met by 507 pupils, or 62.6% of all program enrollees. Within grade levels the percentages of pupils served who met the enrollment and attendance criteria ranged from 54.1% in grade 7 to 87.8% in grade 5. Data pertaining to enrollment and attendance are presented in Table 8.

The evaluation sample was limited to those pupils who were English-speaking, had both pretest and posttest administrations of the standardized achievement test, met the enrollment criterion of at least 15 days, and met the attendance criterion of at least 80% of their individual instructional periods. Of the 810 pupils served, 3 (0.4%) were non-English speaking and therefore were excluded from the evaluation sample. An additional 376 pupils were excluded from the evaluation sample due to incomplete test data and/or nonattainment of the enrollment/attendance criteria. Of the 376 pupils, 74 were lacking only the test data, 197 had complete test data but did not meet the enrollment/attendance criteria, and 105 pupils were lacking both the test data and the enrollment/attendance. The evaluation sample was comprised of the remaining 431 pupils, which was 53.2% of the 810 pupils served. The percentages of pupils served in each grade level who were in the evaluation sample ranged from 42.4% in grade 8 to 77.0% in grade 5. Data from testing are presented in Tables 9 and 10.

Pupil census information also included the teacher's judgment of individual pupil progress as much, some, little, or no progress. Of the 810 pupils served in the program, 187 (23.1%) were perceived by their program teachers as making much progress, 356 (44.0%) as making some progress, 210 (25.9%) as making little progress, and 57 (7.0%) as making no progress.

Standardized Achievement Test Information. As mentioned previously, normal curve equivalents (NCEs) are generally considered to provide the truest indication of pupil growth in achievement because they provide comparative information in equal units of measurement. Data for normal curve equivalents are presented in Table 9. The average NCE change from pretest to posttest for the MIC-Pilot program was 17.0 NCE points. The average NCE change per calendar month in the 5.7 month instructional period between pretest and posttest was 3.0 NCE points, which exceeded the evaluation objective for mathematics of 1.0 NCE point for each month of instruction. The evaluation objective was exceeded in each grade level except grade 8. The average amount of change generally varied inversely with grade level except that the amount of change in grade 5 was less than the change in grade 6 or 7. The grade level averages for mathematics growth ranged from 19.6 NCE points overall, or 3.4 NCE points per calendar month in grade 3; to 5.1 NCE points overall, or 0.9 NCE point per calendar month in grade 8. Furthermore, it should be noted that in this 5.7 month period of possible instruction between pretest and posttest, pupils did not receive instruction every day. They were served an average of 2 class periods in a five or six-day cycle.

Table 8

Number of Pupils Served; Averages for Days of Enrollment, Days of Attendance, Daily Membership, and Hours of Instruction Per Week; and Pupils Meeting Enrollment and Attendance Criteria for MIC-Pilot Program Reported by Grade Level 1988-89

Grade	Pupils Served	Girls	Boys	Average Days of Enrollment[a]	Average Days of Attendance[b]	Average Daily Membership	Average Hours of Instruction per Pupil per Week[c]	Pupils Meeting Enrollment and Attendance Criteria[d]
3	88	46	42	86.3	30.1	66.6	1.4	70
4	90	48	42	92.1	31.3	72.7	1.4	66
5	74	44	30	95.5	33.9	62.0	1.4	65
6	366	174	192	94.7	29.2	303.9	1.4	200
7	159	80	79	99.6	29.8	139.0	1.4	86
8	33	22	11	90.9	24.3	26.3	1.2	20
Total	810	414	396	94.4	29.9	670.6	1.4	507

[a]Days of enrollment were counted from the day after the Chapter test was given to qualify the pupil, through the day of the Chapter test indicating the pupil no longer needed treatment. Some MIC-Pilot pupils may have had more than one enrollment period.

[b]Pupils normally received instruction an average of 2 class periods in a five or six-school-day cycle.

[c]Pupils in one school received approximately 2.8 hours of instruction every 12 school days (.7 of an hour of instruction per day for 4 days, followed by no instruction for the next 8 days), for an average of 1.2 hours per week.

[d]Pupils must have been enrolled at least 15 days and must have attended the program at least 80% of their instructional days.

Table 9

Minimum, Maximum, Average, and Standard Deviation of the Pretest and Posttest Normal Curve Equivalents (NCE) for MIC-Pilot Program Reported by Grade Level 1988-89

Grade	Number of Pupils	Pretest				Posttest				Average NCE Change[a]
		Min.	Max.	Average NCE	Standard Deviation	Min.	Max.	Average NCE	Standard Deviation	
3	64	1.0	58.0	24.7	13.7	5.0	95.0	44.2	19.2	19.6
4	56	5.0	54.0	24.4	12.5	14.0	92.0	42.5	15.1	18.1
5	57	8.0	55.0	29.9	11.5	10.0	95.0	45.3	17.0	15.4
6	171	1.0	52.0	22.9	12.3	1.0	82.0	40.2	15.9	17.3
7	69	3.0	55.0	25.3	12.8	12.0	69.0	41.9	12.6	16.6
8	14	7.0	37.0	25.4	9.5	20.0	43.0	30.5	6.9	5.1
Total	431			24.7	12.6			41.7	16.0	17.0

[a]In the 5.7 month instructional period between pretest and posttest.

EVALSRVCS/P514/RPTFMIC89
12/21/89

Again, it should be kept in mind that NCEs are based on percentiles, which compare the pupil's performance in relation to the general population. No change in NCE score from pretest to posttest does not denote a lack of absolute progress; on the contrary, it means that over the school year the pupil has progressed at the expected rate of growth and has maintained the same relative position in terms of the general population. Even a small gain in NCEs indicates an advancement from the pupil's original position relative to the general population. For readers interested in percentile and grade equivalent statistics, see Tables A-3 and A-4 in Appendix A.

Table 10 contains data related to the changes in NCE scores for the three ranges: (a) no improvement in NCE scores (0.0 or less), (b) some improvement in NCE scores (0.1 to 6.9), and (c) substantial improvement in NCE scores (7.0 or more). The data indicate that 378 pupils (87.7%) made gains in NCE scores. This means that 87.7% of the pupils in the evaluation sample progressed at a rate that was greater than expected for them. More specifically, 336 pupils (78.0%) made substantial improvement; 42 pupils (9.7%) made some improvement; and 53 pupils (12.3%) made no improvement.

ECIA Chapter 1 Teacher Census Information. Teacher Census Forms were completed in September 1988 by the 12 teachers assigned full-time to the MIC-Pilot program. Of the 12 teachers, 4 were assigned to elementary schools and 8 were assigned to middle schools. All teachers had at least a bachelor's degree and 6 teachers (50.0%) had a master's degree. The average number of years of teaching experience was 19.5 overall, and 2.9 years in Title I/Chapter 1.

Parent Involvement Information. The Parent Involvement Form, located on pages 38-40 of Appendix B, provided information from teachers at the end of each month (September 1988 through June 1989) concerning program activities involving parents who had children in the program. These data are presented by month in Table 11. The months showing the most and least parent involvement were October, with a total of 232.0 contacts in 100.0 parent hours, and June, with a total of 17.0 contacts in 6.0 parent hours.

Individual parent conferences accounted for more parent contacts (620.0) than any other activity. Yearly totals for the other activities were: planning, operation and/or evaluation, 14.0 contacts in 6.5 parent hours; group meetings with parents, 164.0 contacts in 165.0 parent hours; parent classroom visits or field trips, 80.0 contacts in 33.5 parent hours; and visits by the teacher to parents' homes, 1.0 contact in 0.5 parent hours. The yearly totals for all five types of parent activity were 879.0 parent contacts in 455.5 parent hours. Because a parent could have involvement in more than one contact, a yearly unduplicated count was also obtained from program teachers in June. This count indicated a total of 416 different parents of program pupils had one or more contacts with the program during the school year.

A separate end-of-the-year teacher survey was used to determine program involvement by nonprogram parents. This survey indicated that during the school year an additional 46 parents who did not have children in the program were involved in 74.0 contacts with the program in 44.0 parent hours.

Table 10

Number and Percent of Pupils in Change Categories for NCE Scores for MIC-Pilot Program Reported by Grade Level 1988-89

	Change Categories for NCE Scores			
	No Improvement (0.0 or less)	Some Improvement (0.1 to 6.9)	Substantial Improvement (7.0 or more)	Total Pupils in Sample
Grade 3				
Number of Pupils	8	5	51	64
% of Pupils	12.5%	7.8%	79.7%	14.8%
Grade 4				
Number of Pupils	5	6	45	56
% of Pupils	8.9%	10.7%	80.4%	13.0%
Grade 5				
Number of Pupils	9	6	42	57
% of Pupils	15.8%	10.5%	73.7%	13.2%
Grade 6				
Number of Pupils	18	11	142	171
% of Pupils	10.5%	6.4%	83.0%	39.7%
Grade 7				
Number of Pupils	10	10	49	69
% of Pupils	14.5%	14.5%	71.0%	16.0%
Grade 8				
Number of Pupils	3	4	7	14
% of Pupils	21.4%	28.6%	50.0%	3.2%
Total Group				
Number of Pupils	53	42	336	431
% of Pupils	12.3%	9.7%	78.0%	100.0%

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12/21/89

Table 11

Number of Parents Involved and Total Parent Hours
for MIC-Pilot Program Reported by Month
1988-89

Program Activities	Months										Totals for Year
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1. Parents involved in the planning, operation and/ or evaluation of your unit											
Number of Parents	0.0	1.0	0.0	2.0	5.0	0.0	3.0	2.0	0.0	1.0	14.0
Total Parent Hours	0.0	0.5	0.0	1.0	2.5	0.0	1.0	1.0	0.0	0.5	6.5
2. Group meetings for parents											
Number of Parents	22.0	63.0	7.0	8.0	3.0	14.0	10.0	6.0	28.0	3.0	164.0
Total Parent Hours	33.0	44.0	0.5	3.5	3.0	11.0	2.5	11.0	56.0	0.5	165.0
3. Individual parent conferences											
Number of Parents	64.0	120.0	83.0	30.0	38.0	85.0	58.0	45.0	84.0	13.0	620.0
Total Parent Hours	57.0	40.0	32.5	11.0	13.0	34.0	17.5	15.5	24.5	5.0	250.0
4. Parental classroom visits or field trips											
Number of Parents	1.0	48.0	3.0	3.0	2.0	3.0	9.0	2.0	9.0	0.0	80.0
Total Parent Hours	0.5	15.5	1.5	1.5	1.0	1.5	6.5	1.0	4.5	0.0	33.5
5. Visits by teacher to parents' homes											
Number of Parents	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0
Total Parent Hours	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5
Total Parent Contacts	87.0	232.0	93.0	43.0	49.0	102.0	80.0	55.0	121.0	17.0	879.0
Total Parent Hours	90.5	100.0	34.5	17.0	20.0	46.5	27.5	28.5	85.0	6.0	455.5

Inservice Evaluation Information. The General Inservice Evaluation Form, located on page 43 of Appendix B, was completed by MIC-Pilot teachers for the three inservice meetings which occurred from September 1988 through May 1989. The number of inservice meetings was greater than the minimum of two meetings during the school year that was specified in the program guidelines. All three of the meetings were attended by both elementary and middle school MIC-Pilot teachers (see Table 1). Participants were asked after each session to rate four statements about the inservice using a 5-point scale which ranged from Strongly Agree (5) to Strongly Disagree (1).

Workshop participants generally gave the Chapter 1 inservice meetings high ratings. The average ratings for the four inservice statements ranged from 4.6 to 4.8 on the 5-point scale. Overall ratings by participants are summarized in Table 12.

Table 12

Number Responding, Average Response, and Percent of Response For Reactions to Inservice Statements for MIC-Pilot Program 1988-89

Statement	Number Responding	Average Response	Percent SA (5)	A (4)	U (3)	D (2)	SD (1)
1. I think this was a very worthwhile meeting.	32	4.6	75.0	18.8	0.0	6.3	0.0
2. The information presented in this meeting will assist me in my program.	32	4.7	75.0	21.9	0.0	3.1	0.0
3. There was time to ask questions pertaining to the presentation.	32	4.8	68.9	28.1	3.1	0.0	0.0
4. Questions were answered adequately.	32	4.8	65.6	31.3	3.1	0.0	0.0

Note. Ratings based on 5-point scale where SA=Strongly Agree, A=Agree, U=Undecided, D=Disagree, and SD=Strongly Disagree.

Open-ended questions on the General Inservice Evaluation Form asked participants to comment about the most and least valuable parts of the meetings, and about additional information or topics they would like to have covered in future meetings. Only those open-ended comments which were made by 4 or more participants at any single session are summarized here. However, the evaluation reports on inservice meetings have been forwarded to the Department of Federal and State Programs and are available on request.

Two items were listed by 4 or more MIC-Pilot as the most valuable parts of the inservice meetings. The first was the evaluation meeting at the Opening Conference for Chapter 1 Teachers. A specific comment referred to the discussion on evaluation procedures and testing. The second item listed as most valuable was all parts of the September 14th session. Specific comments referred to all the handouts and reports, and both (i.e., morning and afternoon) sessions.

Only one item was mentioned by 4 or more teachers as being the least valuable part of the inservice meetings. This item was the exhibits/exhibition area at the Opening Conference. Specific comments were that there was too much time to look at exhibits, that the exhibits could be cut back, and that there were very few math materials.

The only additional information that was suggested by 4 or more teachers was having more meetings like the Menu of Math Activities session, particularly having them earlier in the year. One teacher suggested scheduling the meeting in September.

Summary/Recommendations

The Mathematics Improvement Component (MIC) provided supplementary instruction to selected elementary and middle school pupils who were low achievers in mathematics. The purpose of MIC was to improve mathematics skills and levels of achievement. Three programs comprised MIC: the Elementary Program, the Middle School Program, and the Pilot Program (elementary and middle school components). In the first two (nonpilot) programs, selected pupils were served in computer-assisted-instruction (CAI) labs for 1 class period per day (i.e., 5 periods per week) for the entire school year. In the pilot program selected pupils were served an average of 2 class periods per five or six-school-day cycle and were allowed to move in and out of the program as needed during the school year. The programs are summarized in more detail below.

Elementary and Middle School Programs (MIC-CAI)

The MIC-CAI programs were located in computer-assisted-instruction labs in 20 elementary schools and 2 middle schools. A total of 661 pupils in grade 3-7 were served by the 24 half-time MIC-CAI teachers. Of the 661 pupils, 619 were in elementary schools and 42 were in middle schools. The average number of MIC-CAI pupils served during the school year per teacher was 27.5. The average number of MIC-CAI pupils enrolled per teacher on any given day was 22.7. These numbers are less than the maximum of 28 pupils that could be served during the half-day the lab was used for MIC-CAI instruction. The average amount of instruction per week was 3.6 hours, which is greater than the 3.3 hours per week, i.e., 40 minutes per day, specified in the ECIA Chapter 1 proposal. The average hours of instruction per week varied from pupil to pupil and ranged from 2.4 to 5.0 hours.

The evaluation sample consisted of 356 pupils in grades 3-7 who were English-speaking, met the attendance criterion, and took the pretest and posttest. Analyses of the CTBS Total Mathematics scores indicated an average change of 16.6 NCE points for the 5.7 month instructional period between pretest and posttest, or 2.9 NCE points per month of instruction. Results exceeded the evaluation objective for mathematics growth of 1.0 NCE point for each month of instruction. The objective was exceeded in each grade level. Although the average amount of change generally varied inversely with grade level, the amount

of change in grade 6 was less than the change in grade 7. The average mathematics growth per month of instruction was 4.0 NCE points in grade 3, 3.0 NCE points in grade 4, 2.2 NCE points in grade 5, 1.5 NCE points in grade 6, and 2.1 NCE points in grade 7.

The total number of program teachers was 24, each serving half-time in a MIC-CAI program (12.0 FTEs) and half-time in a CLEAR-CAI program. All teachers had at least a bachelor's degree and 17 teachers (70.8%) had a master's degree. Program teachers reported an average of 10.7 years of Title I/Chapter 1 teaching experience and an average of 20.9 years of overall teaching experience.

Program teachers reported a total of 1140.4 contacts during the school year with 480 different parents of program pupils. The number of contacts and hours varied by month. Individual parent conferences accounted for more parent contacts than any other type of activity.

Evaluation forms were completed for the three inservice meetings. The meetings were rated highly, with the average ratings ranging from 4.7 to 4.8 on the 5-point scale.

A survey of program teachers indicated that most of the elementary CAI labs had Apple microcomputers serviced by the Prescription Learning Company. The exceptions were 2 labs that had Computer Curriculum Corporation computers and 1 lab that had the Sperry Network System that was serviced by Wasatch. Of the 2 middle school labs, 1 lab had Sperry microcomputers in combination with other equipment that was serviced by Wasatch. The other lab had hardware serviced by the Tandy Corporation and software serviced by the Educational Systems Corporation. According to teacher reports, the overall average amount of time pupils worked at the computer stations was 44.5% of program instructional time. The percentage was much higher for the two labs equipped with CCC computers.

Based on the evaluation results, it is strongly recommended that the MIC-CAI programs be continued during the 1989-90 school year, with special consideration given to the following:

1. To determine ways of further improving program effectiveness and efficiency, variations in program implementation (e.g., the use of different types of instructional methods, computer equipment, the percent of pupil time at a computer station) should be studied across schools.

2. In the third year of the program (1989-90) efforts should be made to improve the mathematics growth in grade 6. Although the 1988-89 growth of 1.5 NCE points per month of instruction in grade 6 exceeded the evaluation objective of 1.0 NCE point per month, this amount of growth was less than the 2.1 to 4.0 NCE points per month of instruction achieved in the other grade levels.

3. The MIC-CAI programs and the MIC-Pilot program represent two different models of service delivery for pupils who are low achievers in mathematics. Comparisons of pupil performance in the MIC-CAI programs with pupil performance in the MIC-Pilot program would be desirable in the future. For example, does one model achieve greater NCE growth in relation to the number of pupils served and/or the amount of instructional time? Is one model more cost-effective than the other? Currently such comparisons are problematic because the programs differ with regard to a number of variables (e.g., grade levels served, pupil

characteristics, teacher training, teacher experience, amount of instructional time, types of instructional methods). Thus, it would be difficult to attribute differences in pupil performance to any specific variable(s). Staff members should be encouraged to review and suggest modifications in the proposed ECIA Chapter 1 program design within the Mathematics Improvement Component to enable valid comparisons of pupil performance for the two models. If valid comparisons can be made, Chapter 1 services can be targeted to best meet the needs of low achievers in mathematics.

Middle School Pilot Program (MIC-Pilot)

A total of 810 pupils in grades 3-8 were served in the 5 elementary schools and 8 middle schools in the MIC-Pilot program. Of the 810 pupils, 252 were in elementary schools and 558 were in middle schools. The average number of pupils served during the school year per teacher was 67.5. This number is greater than the approximately 60 pupils that could be served in each classroom. The average number of pupils enrolled per teacher on any given day was 55.9. The average amount of instruction per week was 1.4 hours, which was greater than the 1.1 hours per week (i.e., 80 minutes per six-school-day cycle) specified in the ECIA Chapter 1 proposal. The average hours of instruction per week varied from pupil to pupil and ranged from 1.2 to 2.0 hours. The designated service delivery pattern of 2 class periods in a six-school-day cycle was implemented in only 1 school. In the other 12 schools pupils were served an average of 2 class periods in a five-school-day cycle. The number of pupils who actually moved in and out of the program and then into the program a second time could not be determined.

The evaluation sample consisted of 431 pupils in grades 3-8 who were English-speaking, met the enrollment and attendance criteria, and took the pretest and posttest. Analyses of the CTBS Total Mathematics scores indicated an average change of 17.0 NCE points for the 5.7 month instructional period between pretest and posttest, or 3.0 NCE points per month of instruction. Results exceeded the evaluation objective for mathematics growth of 1.0 NCE point for each month of instruction. The objective was exceeded in each grade level except grade 8. The amount of change in grade 8 was much less than the change in each of the other grade levels. The average mathematics growth per month of instruction was 3.4 NCE points in grade 3, 3.2 NCE points in grade 4, 2.7 NCE points in grade 5, 3.0 NCE points in grade 6, 2.9 NCE points in grade 7, and .9 NCE point in grade 8.

The 12 MIC-Pilot teachers served full-time in the program. Of the 12 teachers, 6 had a bachelor's degree and 6 had a master's degree. The teachers reported an average of 2.9 years of Title I/Chapter 1 teaching experience and an average of 19.5 years of overall teaching experience.

Program teachers reported a total of 879.0 contacts during the school year with 416 different parents of program pupils. The number of contacts and hours varied by month. Individual parent conferences accounted for more parent contacts than any other type of activity.

The three inservice meetings were rated highly by program teachers. The average ratings obtained from Inservice Evaluation Forms ranged from 4.6 to 4.8 on the 5-point scale.

Based on the evaluation results, it is strongly recommended that the MIC-Pilot program be continued during the 1989-90 school year with special

consideration given to the following:

1. There should be a correspondence between the service delivery pattern as designated in the program design in the ECIA Chapter 1 proposal and the actual pattern that is implemented in the program. Because the designated pattern of 2 class periods in a six-school-day cycle was found to be unfeasable by the program teachers, and because the pattern was implemented in only 1 of the 13 schools, it should be reconsidered. If the six-day cycle is considered to be a critical aspect of the program then the MIC-Pilot teachers should be provided inservice on how to overcome obstacles to its implementation in their schools. But if the six-day cycle is not critical to the program then the designated pattern should be changed to the five-day cycle that was implemented in 11 of the 13 schools.

2. To determine ways of further improving program effectiveness and efficiency, variations in program implementation (e.g., selection procedures, service delivery patterns, instructional methods, communication with classroom teachers, testing procedures, movement in and out of the program) should be studied across schools.

3. In the third year of the program (1989-90) efforts should be made in grade 8 to achieve (and even exceed) the evaluation objective of 1.0 NCE point per month of instruction. The 1988-89 growth of .9 NCE point per month of instruction in grade 8 was not only less than the evaluation objective, but it was also much less than the 2.7 to 3.4 NCE points per month of instruction achieved in the other grade levels.

4. The nature and amount of movement in and out of the program should be determined because it is a key aspect of the program.

5. As previously stated, the MIC-Pilot program and the MIC-CAI programs represent two different models of service delivery for pupils who are low achievers in mathematics. Comparisons of pupil performance in the MIC-Pilot program with pupil performance in the MIC-CAI programs would be desirable in the future, but such comparisons are currently problematic because the programs differ with regard to a number of variables. Staff members should be encouraged to review and suggest modifications in the proposed ECIA Chapter 1 program design within the Mathematics Improvement Component to enable valid comparisons of pupil performance for the two models. If valid comparisons can be made, Chapter 1 services can be targeted to best meet the needs of low achievers in mathematics. [See recommendation 3 for the MIC-CAI programs, page 25.]

References

CTB/McGraw-Hill Staffwriters. (1981). Comprehensive Tests of Basic Skills. Monterey, California: CTB/McGraw-Hill.

Chamberlain, E. (1989, June). Interim evaluation report: Distribution of different computer systems in Chapter 1 and DPPF program labs using computer-assisted instruction (Education Consolidation and Improvement Act - Chapter 1 and Ohio Disadvantaged Pupil Program Fund Interim Evaluation Report). Columbus, Ohio: Columbus (Ohio) Public Schools, Department of Evaluation Services.

Lore, R., & Chamberlain, E. (1989, July). Final evaluation report: Language development component: Compensatory Language Experiences and Reading Program (Education Consolidation and Improvement Act - Chapter 1 Final Evaluation Report). Columbus, Ohio: Columbus (Ohio) Public Schools, Department of Evaluation Services.

Appendix A

Additional Tables

Table A-1

Minimum, Maximum, Median, and Standard Deviation of the Pretest and Posttest Percentiles for MIC-CAI Programs Reported by Grade Level 1988-89

Grade	Number of Pupils	Pretest				Posttest			
		Min.	Max.	Median Percentile	Standard Deviation	Min.	Max.	Median Percentile	Standard Deviation
3	85	1.0	55.0	11.0	12.3	1.0	98.0	41.0	28.8
4	128	2.0	61.0	11.0	14.5	1.0	99.0	36.0	22.2
5	132	2.0	63.0	23.0	14.5	2.0	95.0	39.0	22.6
6	5	1.0	24.0	22.0	10.0	5.0	48.0	21.0	18.4
7	6	3.0	22.0	16.5	7.8	11.0	45.0	30.5	12.0

EVALSRVCS/P514/RPTFMIC89
12/21/89

Table A-2

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Grade Equivalents
for MIC-CAI Programs Reported by Grade Level
1988-89

Grade	Number of Pupils	Pretest				Posttest			
		Min.	Max.	Median Grade Equivalent	Standard Deviation	Min.	Max.	Median Grade Equivalent	Standard Deviation
3	85	1.7	3.2	2.3	0.3	2.0	8.5	3.5	1.2
4	128	2.3	4.4	3.0	0.5	2.1	8.9	4.3	1.0
5	132	2.8	5.6	4.1	0.6	3.1	9.1	5.2	1.1
6	5	3.3	5.0	4.9	0.7	4.2	6.6	5.3	1.0
7	6	4.0	5.7	5.3	0.7	5.1	7.4	6.8	0.8

EVALSRVCS/P514/RPTFMIC89
12/21/89

Table A-3

Minimum, Maximum, Median, and Standard Deviation of the Pretest and Posttest Percentiles for MIC-Pilot Program Reported by Grade Level 1988-89

Grade	Number of Pupils	Pretest				Posttest			
		Min.	Max.	Median Percentile	Standard Deviation	Min.	Max.	Median Percentile	Standard Deviation
3	64	1.0	65.0	11.0	15.4	2.0	98.0	35.0	27.3
4	56	2.0	57.0	11.0	13.2	4.0	98.0	31.5	22.6
5	57	2.0	60.0	20.0	13.8	3.0	98.0	40.0	25.8
6	171	1.0	55.0	11.0	11.8	1.0	93.8	33.0	23.5
7	69	1.0	60.0	13.0	13.2	3.0	80.0	36.0	20.0
8	14	2.0	27.0	13.5	8.8	8.0	38.0	16.5	8.9

Table A-4

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Grade Equivalents
for MIC-Pilot Program Reported by Grade Level
1988-89

Grade	Number of Pupils	Pretest				Posttest			
		Min.	Max.	Median Grade Equivalent	Standard Deviation	Min.	Max.	Median Grade Equivalent	Standard Deviation
3	64	1.7	3.4	2.3	0.4	2.1	8.5	3.4	1.1
4	56	2.3	4.2	3.0	0.5	2.9	8.5	4.2	1.0
5	57	2.8	5.5	4.0	0.6	3.3	10.9	5.3	1.4
6	171	2.8	6.3	4.3	0.7	3.3	10.1	5.9	1.3
7	69	4.0	7.5	5.1	0.9	4.3	9.7	7.0	1.2
8	14	4.1	6.8	5.5	1.0	5.2	8.0	6.4	0.9

EVALSRVCS/P514/RPTFMIC89
12/21/89

Appendix B

Instruments

COLUMBUS PUBLIC SCHOOLS - Columbus, Ohio PUPIL CENSUS FORM

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

SCHOOL | N R | GRADE

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

WAS THIS A "NON-ENGLISH SPEAKING" STUDENT?
YES * NO *

DID THIS PUPIL BECOME QUALIFIED FOR A SPECIAL ED. PROGRAM?
YES * NO *

HOW DID YOU FEEL THIS PUPIL PROGRESSED WHILE IN YOUR PROGRAM?
MUCH PROGRESS * SOME PROGRESS * LITTLE PROGRESS * NO PROGRESS *

TEACHER NUMBER

PROGRAM CODE

STUDENT

SCHOOL

GRADE

SEX
MALE
FEMALE

TOTAL DAYS OF PROGRAM ENROLLMENT 1 2 3

TOTAL DAYS OF PROGRAM ATTENDANCE 4 5 6

HOURS OF INSTRUCTION PER WEEK

NCS Trans Optic 08 8153 3

1988-89
Teacher Census Form

Social Security Number ___ ___ ___-___ ___-___ ___ ___ ___

Name_____ Program Code_ _ _ _ _

School Assignment_____ Cost Center _ _ _

Circle only the program(s) you are in:

ECIA Chapter 1 Programs:
(1) ADK
(2) CLEAR-Reading Recovery
(3) CLEAR-Elementary (1-5)
(4) CLEAR-Elementary-CAI
(5) CLEAR-Middle (6-8)
(6) CLEAR-Middle-CAI
(7) MIC-Elementary-CAI
(8) MIC-Middle-CAI
(9) Math-Pilot (3-8)

DPPF Programs:
(10) Secondary Reading (Regular)
(11) Secondary Reading (CAI)
(12) HSCA

Other (Specify)
(13) _____

[a]Number of Years of Teaching Experience_____

[b]Number of Years of Title I/Chapter 1 Teaching Experience_____

[c]I am certified in reading as indicated by the subject area on my teaching certificate.

_____Yes _____No

Highest College Degree Received_____

Full-Time Employee_____

or

Part-Time Employee_____

DIRECTIONS:

[a]Total all years of experience, including those which may have occurred outside of Columbus Public Schools. Please include present school year. The timeline on the back of this page will help you in determining total number of years.

[b]1. For every full year taught in Title I/Chapter 1 give yourself 10 months experience. Please include the present school year. The timeline on the back of this page will help you in determining the number of full years taught in Title I/Chapter 1.

2. For every summer term you taught in Title I/Chapter 1 give yourself two months experience.

3. Add in any miscellaneous experience, a part-year perhaps.

4. Add the totals for 1, 2, and 3 and divide by 10. Place the resulting quotient in the blank for question b above.

[c]Certification is defined as having one of the following:

1. reading specified on Bachelor degree.

2. reading specialist certificate.

3. M.A. in reading as a subject.

Timeline for Fifty Years of Continuous Teaching Experience

School Year	Total Years	Assignment	School Year	Total Years	Assignment
1939-40	50		1964-65	25	
1940-41	49		1965-66	24	
1941-42	48		1966-67	23	
1942-43	47		1967-68	22	
1943-44	46		1968-69	21	
1944-45	45		1969-70	20	
1945-46	44		1970-71	19	
1946-47	43		1971-72	18	
1947-48	42		1972-73	17	
1948-49	41		1973-74	16	
1949-50	40		1974-75	15	
1950-51	39		1975-76	14	
1951-52	38		1976-77	13	
1952-53	37		1977-78	12	
1953-54	36		1978-79	11	
1954-55	35		1979-80	10	
1955-56	34		1980-81	9	
1956-57	33		1981-82	8	
1957-58	32		1982-83	7	
1958-59	31		1983-84	6	
1959-60	30		1984-85	5	
1960-61	29		1985-86	4	
1961-62	28		1986-87	3	
1962-63	27		1987-88	2	
1963-64	26		1988-89	1	

CHAPTER 1 EVALUATION
PARENT INVOLVEMENT SURVEY

mailing label
goes here

Name _____

School _____

For the month of MAY, 1989

	(A) Number of Parents	(B) Total Number of Hours
1. Parents involved in the planning, operation, and/or evaluation of your unit	____	____.__
2. Group Meetings for Parents	____	____.__
3. Individual Parent Conferences (include phone conferences)	____	____.__
4. Parental Classroom Visits or Field Trips	____	____.__
5. Visits by you to Parent Homes	____	____.__
6. Totals	____	____.__
7. Estimated Unduplicated Count of Parents	____	

DIRECTIONS:

1. Complete all information, fold over so back is showing, staple, and place in school mail.

2. Place a parent in only one activity for any one meeting.

3. Total hours equals the number of parents times the number of hours spent, e.g., a group meeting for 10 parents which lasts 3 hours would result in 10 parents (Column A) and 30.0 hours (Column B), 15 parent conferences each for 30 minutes would result in 15 parents and 7.5 hours. Please round all figures in Column B to the nearest half hour. Enter half hours as .5, no fractions please.

4. Item 7 - This is the number of different parents seen, not the total in 6A. If you had 16 parent conferences but 10 conferences were with the same parent, the unduplicated count is 7 parents - you saw 7 parents but had 16 conferences. Do not count a parent more than once. The figure in Item 7A can never exceed the figure in Item 6A.

Please return by Friday, June 2, 1989.

CHAPTER 1 EVALUATION
PARENT INVOLVEMENT SURVEY

Mailing Label Here

ANNUAL UNDUPLICATED COUNT

IMPORTANT

Enter on the line to the left the annual unduplicated count of parents you had involved in any of the Activities 1-5 below. COUNT EACH PARENT ONLY ONCE FOR THE YEAR. If you have questions regarding this count, please call Jane Williams at 365-5167.

COMPLETE THE REST OF THIS REPORT FOR JUNE ONLY

Activities	(A) Number of Parents	(B) Total Number of Hours
1. Parents involved in the planning, operation, and/or evaluation of your unit	_____	_____.__
2. Group Meetings for Parents	_____	_____.__
3. Individual Parent Conferences (include phone conferences)	_____	_____.__
4. Parental Classroom Visits or Field Trips	_____	_____.__
5. Visits by you to Parent Homes	_____	_____.__
6. Totals	_____	_____.__
7. Estimated Unduplicated Count of Parents	_____	

DIRECTIONS:

1. Complete all information, fold over so back is showing, staple, and place in school mail.

2. Place a parent in only one activity for any one meeting.

3. Total hours equals the number of parents times the number of hours spent, e.g., a group meeting for 10 parents which lasts 3 hours would result in 10 parents (Column A) and 30.0 hours (Column B), 15 parent conferences each for 30 minutes would result in 15 parents and 7.5 hours. Please round all figures in Column B to the nearest half hour. Enter half hours as .5, no fractions please.

4. Item 7 - This is the number of different parents seen, not the total in 6A. If you had 16 parent conferences but 10 conferences were with the same parent, the unduplicated count is 7 parents - you saw 7 parents but had 16 conferences. Do not count a parent more than once. The figure in Item 7A can never exceed the figure in Item 6A.

RETURN RIGHT AWAY BUT NO LATER THAN FRIDAY, JUNE 2, 1989

Mailing Label Here

CHAPTER 1 EVALUATION
PARENT INVOLVEMENT SURVEY
SCHOOL YEAR ESTIMATE OF PARENTS
NON-CHAPTER 1 STUDENTS

Name _____

School _____

Activities	(A) Number of Parents	(B) Number of Parent Hours
1. Parents involved in the planning, operation, and/or evaluation of your unit (Do not include Parent Advisory Council members.)	_____	____.__
2. Group Meetings for Parents (Do not include Parent Advisory Council meetings.)	_____	____.__
3. Individual Parent Conferences (include phone conferences)	_____	____.__
4. Parental Classroom Visits or Field Trips	_____	____.__
5. Visits by you to Parent Homes	_____	____.__
6. Estimated Unduplicated Count of Parents	_____	

DIRECTIONS: Please complete all information. Indicate a 0 if the number of parents or hours is actually zero--otherwise enter the number.

Column A (Number of Parents) lines 1-5: Please place a par - in only one activity for any one meeting.

Column B (Number of Parent Hours) lines 1-5: Indicate the sum of the hours each parent spent in an activity. For example, a group meeting with 10 parents which lasted 3 hours should result in a 10 on line 2, Column A and a 30.0 on line 2, Column B (each parent met with the teacher 3 hours and there were 10 parents). Please round all figures in Column B to the nearest half-hour. Enter half hours as .5, no fractions please.

For the Estimated Unduplicated Count of Parents do not count a parent more than once (even if a parent is listed in more than one activity).

After completing all the information on this survey, fold it so the back is visible, staple, and place it in the school mail.

Thank you.

ECIA CHAPTER 1 AND DPPF
ORIENTATION INSERVICE EVALUATION FORM
September 6, 1988

Circle only the program(s) you are in:

ECIA Chapter 1 Programs:
(1) ADK
(2) CLEAR-Reading Recovery
(3) CLEAR-Elementary (1-5)
(4) CLEAR-Elementary-CAI
(5) CLEAR-Middle (6-8)
(6) CLEAR-Middle-CAI
(7) MIC-Elementary-CAI
(8) MIC-Middle-CAI
(9) Math-Pilot (3-8)

DPPF Programs:
(10) Secondary Reading (Regular)
(11) Secondary Reading (CAI)
(12) HSCA

Other (Specify)
(13) _____

Circle the number that indicates the extent to which you agree with statements 1-4, in rating the overall day of inservice.

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

Circle the number that indicates how you would rate each of the following portions of today's inservice in regard to interest and usefulness of presentations.

	Superior	Excellent	Good	Fair	Poor
5. Large Group Session					
a. Interest	5	4	3	2	1
b. Usefulness	5	4	3	2	1

****
*
* Please turn over for questions 6-12 *
*
****

	Superior	Excellent	Good	Fair	Poor
6. Commercial Exhibits					
a. Interest	5	4	3	2	1
b. Usefulness	5	4	3	2	1
7. Mini-session with Main Speaker					
a. Interest	5	4	3	2	1
b. Usefulness	5	4	3	2	1
8. Program Coordinators' Mini-session					
a. Interest	5	4	3	2	1
b. Usefulness	5	4	3	2	1
c. Clarity of instructions	5	4	3	2	1
9. Evaluation Presentation					
a. Interest	5	4	3	2	1
b. Usefulness	5	4	3	2	1
c. Clarity of instructions	5	4	3	2	1

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?

_____

_____

_____

GENERAL INSERVICE EVALUATION FORM
1989-90

Inservice Topic: _____

Presenter(s): _____

Date: ____/____/____ (e.g., 03/05/90)
MM DD YY

Session (Check only one): ____ all day ____a.m. ____ p.m.

Circle only the program(s) you are in:

ESEA Chapter 1 Programs:
(1) ADF
(2) CLEAR-Reading Recovery
(3) CLEAR-Non-Public (1-8)
(4) CLEAR-Primary-Whole Language
(5) CLEAR-Elementary-Regular (2-5)
(6) CLEAR-Elementary-CAI (3-5)
(7) CLEAR-Middle-Regular (6-8)
(8) CLEAR-Middle-CAI (6-8)
(9) MIC-Elementary-CAI (3-5)
(10) MIC-Elementary-CBE (3-5)
(11) MIC-Middle-CBE (6-7)

DPPF Programs:
(12) Secondary Reading Program (Regular)
(13) Secondary Reading Program (CAI)
(14) HSCA

Other (Specify)
(15)_____

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

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

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

_____

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

_____

7. Please list any additional information or topics you would like to see covered in future meetings. a) _____

b) _____

c) _____

MEMO

TO: CLEAR, MIC, and SRP Teachers Using Computer-Assisted Instruction (CAI)

FROM: Ed Chamberlain (CLEAR-CAI and SRP-CAI evaluations)
Phyl Thomas (MIC-CAI evaluations)

SUBJECT: Computer Systems Used in CAI Classrooms

DATE: February 15, 1989

Since there is a variety of different computer systems used in program classrooms, it is necesrary for us to periodically assess the distribution and use of these computer systems. Please take a few minutes to complete the form below, fold and staple with the return mailing label showing, and return it in the school mail no later than February 28, 1989.

Teacher _____ School _____

1. Please give the number of Computers or Terminals in your lab, by Type

___Apple
___TRS-80
___Microhost
___Sperry
___Dolphin
___PET
___Other _____

2. Please check the company servicing the computers

___Prescription Learning
___B&B
___CCC
___Wasatch
___Houghton-Mifflin
___None
___Other _____

3. Does your computer system include a command module/teacher management system? ___Yes ___No

4. How many computers (or terminals) are available in your lab for student work (do not include the Command Module)? _____

5. The average number of minutes per week a pupil is served in the program

(Read program pupils) (Math program pupils)

6. The average number of minutes per week a pupil works at a computer

(Reading program pupil) (Math program pupil)

7. Additional comments: _____

_____

cc: Dick Amorose
Rose Carbol
John Hilliard
Pat Huggard
Dick Snide
Jane Williams
Dorothy Wilson