DOCUMENT RESUME

ED 082 146 24 CS 000 739

TITLE	Southeast Arkansas Educational Service Center, Title III. Final Report.
INSTITUTION	Southeast Arkansas Educational Service Center, Monticello.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	1 Sep 72
NOTE	232p.
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	Curriculum Development; Disadvantaged Youth; *Educable Mentally Handicapped; Grade 1; High School Students; Individualized Instruction; *Inservice Programs; Instructional Materials; Reading; *Reading Instruction; *Reading Programs; Reading Research; Science Materials; *Science Programs
IDENTIFIERS	Arkansas; Elementary Secondary Education Act Title III; ESEA Title III; Warren Science Project

ABSTRACT

The results of five projects are presented in this report. Project 1, "An Exemplary First Grade Reading Program," attempted to establish an exemplary first grade reading program over a two-year period. The first year involved grouping as opposed to non-grouping. The second year a non-graded primary was established. The findings indicated that the non-graded program was successful in individualizing instruction. Project 2, "An Exemplary Special Education Work Center," involved educable mentally retarded students in real-life situations similar to ones the children would encounter in adult life. The findings indicated that students achieved approximately 78 percent of the individual behavioral objectives written for them. Project 3, "An Exemplary Lower Elementary Reading Project," was designed to increase the reading ability of disadvantaged students in a black elementary school. In project 4, "Warren Science Project," the objectives were to increase the science achievement of the laboratory groups as compared to the control groups, to show that the attitude scores of the laboratory group were higher than those of the control groups, and to show that the laboratory group exhibited a greater preference for science. Project 5, "An Examplary In-Service Program for Improving Classroom Instruction," was designed to evaluate curriculum materials. (WR)

SOUTHEAST ARKANSAS

EDUCATIONAL SERVICE CENTER, TITLE III

FINAL REPORT

September 1, 1972

Monticello, Arkansas

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PROJECT ABSTRACT

TITLE OF PROJECT Crossett No. 1
An Exemplary First Grade Reading Program

TARGET POPULATION First Grade Students NUMBER SERVED 750

PARAGRAPH DESCRIPTION

The purpose of the Crossett Reading project was to attempt to establish an exemplary first grade reading program. A part of the study the first year involved grouping as opposed to non-grouping. The second year, based on first year results, a non-graded primary was established. The second part of the study over the two year period involved an in-depth study of different approaches to reading for beginning students.

MAJOR OBJECTIVES

For the first year of operation the major objectives of the Crossett project involved an in-depth study of grouping as opposed to non-grouping. As a result of the first year of study Crossett decided to non-grade their primary. For the first year of the project an in-depth study of different approaches to reading was also attempted. At the end of the first year of operation results indicated that a more thorough study needed to be made of the correlated language arts approach to reading.

ACTIVITIES TO ACHIEVE OBJECTIVES

For the first year of operation one school served as the control school. Children in this school were not grouped but the children in the other three schools were ability grouped. Four different approaches to reading were tried in the classrooms. Teachers had several hours of in-service training.

For the second year of the study the teachers were involved in the activities necessary for non-grading the primary grades. Three schools did a more thorough study of a correlated language arts approach to reading. Each teacher received many hours of in-service to help her to get the most out of the reading program she was using as her basic.

EVALUATION STRATEGY

First Year. Students were pre-tested with the Harrison Stroud Reading Readiness Profile. Students in the experimental groups were homogeneously grouped and assigned materials from either SRA Lift-Off, Open Court Correlated Language Arts or Macmillan Basal Reading Program.

Comparisons were made between homogeneously grouped and heterogeneously grouped classes by means of t-test. SRA, Open Court and Macmillan classes were compared by a series of t-test to determine significance of differences.

Students were pre-tested with the Harrison Stroud Reading Readiness Test the first week of school. Three of four elementary schools were designated as experimental schools and supplied with a correlated language arts reading program (Open Court). The fourth elementary school was designated as the control school and supplied with a basal reading program (Macmillan). The first grade students were post-tested in the Spring of 1972 with the California Reading Test and on writing skills and attitude comparisons of reading achievement was made by an analysis of covariance with the Harrison Stroud scores as covariates. Attitudes and writing skills scores were compared by an independent t-test.

EVALUATION FINDINGS

First Year. No differences between the experimental and control classes were obtained. Ability grouping did not provide any advantage in student achievement. No significant differences were found in reading materials.

Second Year. The experimental group had significantly higher reading achievement in vocabulary, reading comprehension and total reading. The experimental students also had significantly higher attitudes and writing skills. The first grade students in a correlated language arts program did significantly better in all evaluated areas than did first grade students in the basal reading program. The non-graded program was found to be successful in individualizing instruction.

PROJECT ABSTRACT

TITLE OF PROJECT Crossett No. 2
An Exemplary Special Education Work Center

TARGET POPULATION Educable Mentally Retarded NUMBER SERVED 89

PARAGRAPH DESCRIPTION

This project involved students in real-life situations similar to ones these children will encounter as adults. Academics were taught in the classroom then applied in the work center. The teachers wrote individual behavioral objectives for each child, resulting in more thorough planning and evaluation.

MAJOR OBJECTIVES

Improve the childs self-concept.
Enable the child to interact successfully with others.
Help the child obtain and manage, with limited supervision, materials and money.
Enable the child to progress academically according to his mental expectancy.

ACTIVITIES TO ACHIEVE OBJECTIVES

1. In-service training with special education teachers.
2. Student participation in work center.
3. Christmas program and bazaar.

EVALUATION STRATEGY

Students were given behavioral checklists which were developed by the staff. Each item marked "no" was considered to indicate a definite individual need in a skills area. Behavioral objectives were written by the teacher for each student in an area where a "no" response occurred on the checklist. Percentages of objective achieved were calculated and summarized. Students were also given the Wide Range Achievement Test as a pre- and post-test to determine achievement gains.

EVALUATION FINDINGS

Students achieved approximately 78% of the individual behavioral objectives written for them.

Students gained an average of 3 months in reading on the Wide Range Achievement Test. They gained an average of 3.4 months in spelling and an average of 7.6 months in arithmetic. Teachers gained in their skill of writing more realistic behavioral objectives for the individual child.

PROJECT ABSTRACT

TITLE OF PROJECT Parkdale
An Exemplary Lower Elementary Reading Project

TARGET POPULATION Lower Elementary Students NUMBER SERVED 89

PARAGRAPH DESCRIPTION

The Parkdale Reading Project was designed to increase the reading ability of disadvantaged students in a black elementary school. The elementary school was composed of grades 1-4. The students were divided into two matched groups on a non-graded basis. One group studied the Macmillan Basic Reading Program and one group studied the Open Court Correlated Language Arts Program.

MAJOR OBJECTIVES

The general objective was to establish an exemplary lower elementary reading program in a predominantly Negro School in Southeast Arkansas.

Specific Objectives:

A. Experimental classes including first, second, third, and fourth grade students will achieve at least one full grade level in reading after receiving instruction with Open Court instructional materials as measured by pre- and post-testing.

B. Experimental classes will show a greater increase in reading skills than the control group after receiving instruction with Open Court materials as measured by pre- and post-tests.

ACTIVITIES TO ACHIEVE OBJECTIVES

Each teacher received all of the materials that was considered by the publishing companies to be necessary for success with their reading program. Ample amounts of readiness materials were also available. Regular in-service training was conducted to show the teachers how to best utilize all of the reading materials at her disposal. The teachers also were able to attend training workshops that were conducted by consultants from the publishing companies. Library books were made available to help create an interest in students to want to read better.

EVALUATION STRATEGY

Students were divided into beginning first grade and into level two reading which included second year first graders, second graders, third graders and fourth graders. These were then assigned to Macmillan or Open Court classes on a matching basis according to Harrison Stroud Reading

Readiness or SRA Achievement pre-test scores. Students were post-tested in May on the SRA Achievement Test. Scores were compared for Level 1 and Level 2 groups by an analysis of covariance.

EVALUATION FINDINGS

First Year. No significant differences existed.

Second Year. Level I students in the Open Court group had significantly greater achievement than the Macmillan group. Open Court beginning first graders gain approximately 3 months more than the Macmillan Group.

Level II groups were not significantly different.

PROJECT ABSTRACT

TITLE OF PROJECT Warren Science Project

TARGET POPULATION 5th & 6th Grade Science Students NUMBER SERVED 535

PARAGRAPH DESCRIPTION

The Warren Science Project represents an exemplary science program for Southeast Arkansas. The project provided laboratory facilities and equipment for fifth and sixth grade students. The project also allowed students some free time in the laboratory for the pursuit of individual interests.

MAJOR OBJECTIVES

To significantly increase the science achievement of the laboratory groups as compared to the control group as measured by the Metropolitan Science Achievement Test.

To show that the attitudes of the laboratory group was significantly higher than the attitudes of a control group.

The laboratory groups will exhibit a significantly greater preference for science than the control groups.

ACTIVITIES TO ACHIEVE OBJECTIVES

Teachers received in-service training in two hour sessions every week to assist them in coordinating the laboratory with the textbook series. Students in the experimental groups used the laboratory two or three times each week. Many laboratory sessions were unstructured allowing each student to pursue areas of special interest.

EVALUATION STRATEGY

Students were divided into two categories, high and low achievers and then randomly assigned to high experimental and control and to low experimental and low control. Students were pre-tested on science achievement with the Metropolitan Science Achievement Test and on attitudes and preference for science with staff developed instruments. Students were post-tested in May, and groups were compared by means of t-tests to determine the significance of difference.

EVALUATION FINDINGS

First Year. No significant difference in student achievement existed between experimental and control classes.

Second Year. Students in the experimental groups exhibited significantly higher attitude scores than the control groups. Experimental students

exhibited a greater preference for science than the control groups. Only one experimental section had a significantly higher science achievement at the end of the year. Experimental students showed greater retention of subject matter than control groups from May to September. Black students in experimental groups showed significartly higher attitudes than those in the control groups.

PROJECT ABSTRACT

TITLE OF PROJECT Lake Village
An Exemplary In-Service Program for Improving Classroom Instruction

TARGET POPULATION NUMBER SERVED

PARAGRAPH DESCRIPTION

The project was designed to promote systematic evaluation and revision of curriculum materials and instructional methods for the improvement of classroom instruction through the utilization of the Evaluative Procedure for Innovative Curriculum (EPIC) Model.

MAJOR OBJECTIVES

A. Teachers and administrators will learn to develop and write behavioral objectives through instruction based on the EPIC model for evaluation as measured by pre- and post-tests constructed by and administered by EPIC Consultants.

B. Students enrolled in English (grades 4-9) will increase learning at least one grade level with the interim between pre- and post-testing. After receiving instruction based on behaviorally stated objectives. For reporting purposes the SRA Achievement Test will be used to measure the increase in learning.

C. Students enrolled in Social Studies (Grades 4-9) will increase learning at least one grade level with the interim between pre- and post-testing, after receiving instruction based on behaviorally stated objectives.

D. Students enrolled in English (grades 10-12) will increase their learning at least one grade level with the interim between pre- and post-testing, after receiving instruction based on behaviorally stated objectives.

E. Students enrolled in Social Studies (grades 10-12) will increase their learning at least one grade level or an equivalency with the interim between pre- and post-testing, after receiving instruction based on behaviorally written objectives.

F. Students enrolled in Business Education classes (grades 10-12) will increase learning sufficiently, after receiving instruction based on behaviorally stated objectives, to make passing grades.

ACTIVITIES TO ACHIEVE OBJECTIVES

Teachers received 18 hours of pre-school in-service training from Dr. Richard Powell of EPIC. Two hour in-service workshops were conducted each month by the SAESC Research & Evaluation coordinator. Teachers wrote behavioral objectives, measured student achievement specified in the objectives and used the results in writing new objectives.

EVALUATION STRATEGY

Teachers were pre-tested prior to the pre-school workshop and post-tested at the end to determine those who had scored 70%. Students were pre- and post-tested on the SRA or ITED to determine the grade level gain.

EVALUATION FINDINGS

Teachers successfully learned to write objectives. Objective B and C were not achieved for grades 5-9. Objective C was achieved in grade 4. Tenth through twelth grade students did increase at least one grade level in English and Social Studies. Ninety-five percent of students in Business Education passed typing.

NARRATIVE

I. Project Summary By Year

Crossett No. 1
An Exemplary First Grade Reading Program

First Year. Experimental classes were classes that had their students ability grouped. Control classes were heterogeneously grouped.

1. Objectives:

Objective A: Students in experimental groups will be able to enter the first grade instructional program, after receiving readiness instruction, sooner than students in the control groups as indicated by checklists and teachers' records.

Objective B: The number of repeaters in the experimental groups will be less than the number of repeaters in the control group, after receiving instruction, as indicated by teachers' records at the end of the school year.

Objective C: Students in one of the experimental groups receiving instruction from SRA Lift-Off basal series will achieve at a higher grade level than matched students from the control school as indicated by the California Reading Test (Form W).

Objective D: Students grouped in the experimental schools and receiving instruction with Open Court Basal materials will achieve at a higher grade level than matched students from the control school as indicated by the California Reading Test (Form W).

2. Activities:

The activities to achieve all objectives were the same. Experimental and control teachers were monitored by the SAESC Reading Specialist. An Open Court representative conducted a workshop with the Open Court first grade teachers. The consultant also visited in the classroom. The Macmillan teachers were

involved in a pre-school Macmillan workshop. Monthly in-service meetings were also conducted by the SAESC Reading Specialist.

3. Data:

Open Court, SRA, Macmillan, and other programs were assigned to various levels in the experimental classes by Crossett administrators and teachers. Teacher preference in programs prevented a random assignment of programs to levels, as the SAESC staff had preferred. Open Court, SRA, and Macmillan programs were also assigned to the control classes.

All students were tested in August, 1970, and again in May, 1971. The Harrison Stroud Reading Readiness Composite Score was used to group students initially, and the California Reading Total score was used as a post-test criterion. The Metropolitan Reading Readiness Composite Score was used as a back-up for the Harrison Stroud.

Tests of significance were computed between experimental and control pre-test means and experimental and control post-test means.

No significant difference existed between the time required for students in the experimental groups and students in the control groups to enter the instructional program.

All students were promoted to the second grade. The students in the lower quartile will start in the lower levels of the non-graded program that Crossett is planning for next year.

It was impossible to obtain matched students from Anderson, the control school, for every student in the SRA and Open Court experimental classes because Anderson had only one SRA and one Open Court class and they did not match the experimental SRA and

Open Court classes. Therefore, for every student selected in the SRA control class a student with an equal Harrison Stroud Reading Readiness Composite Score was selected from one of the three experimental classes studying SRA. This procedure allowed the matching of 21 students studying SRA materials under one teacher in the control school with 21 students studying SRA materials under three teachers in the experimental schools.

Tests of significance were applied between experimental and control Harrison Stroud pre-test mean scores and experimental and control California post-test mean scores. The pre-test t-statistic was 0.37 and the post-test t-statistic was 0.57. No significant difference resulted on either the pre-test or post-test mean scores.

Ten control students studying Open Court under one teacher in Anderson School were matched with nine students studying Open Court under two teacher in experimental schools.

Tests of significance were applied to the pre- and post-test data. The pre-test t-statistic was 0.15, not significant at the 0.05 level, and the post-test t-statistic was 0.87, not significant at the .05 level. A table summarizing these and additional data is presented in Table 1.

In addition to the objectives set forth in the proposal, the SAESC staff proposed to determine if there might be any significant difference between reading achievement of students studying various materials at various levels of student ability. After having surveyed the material and student population in Crossett,

TABLE 1. HOMOGENEOUSLY GROUPED STUDENTS VERSUS HETEROGENEOUSLY GROUPED STUDENTS

	N	Harrison Stroud $\bar{X}$	t-Value	California $\bar{X}$	t-Value
Homogeneously Grouped Students Studying Open Court	9	272.22	0.15	72.78	0.87
Heterogeneously Grouped Students Studying Open Court	10	275.80		77.30	
Homogeneously Grouped Students Studying SRA	21	200.05	0.37	64.29	0.57
Heterogeneously Grouped Students Studying SRA	21	213.19		61.67	
Homogeneously Grouped Students Studying Macmillan	15	156.00	0.39	59.13	
Heterogeneously Grouped Students Studying Macmillan	16	147.31		54.31	
Homogeneously Grouped Students	45	199.80	0.21	64.26	0.20
Heterogeneously Grouped Students	47	204.08		62.49	

the following questions were asked:

1. Could it be that SRA Lift-Off materials are better than Open Court materials for students in Level I (top class in each school where students were homogeneously grouped)?

2. Could it be that SRA Lift-Off materials are better than Macmillan materials for Level II students (second highest class in each school where students were homogeneously grouped)?

The SRA classes were matched with two Open Court classes on the basis of their Harrison Stroud Reading Readiness Composite Scores. The t-statistic was used to test for significance between the paired classes and was not significant at the .05 level. California Reading tests were given in May, 1971, and a t-statistic was applied to test for significance between the paired classes. No significant differences occurred between the paired classes at the .05 level. These data are presented in Table 2

4. Comments:

Several intervening factors may have affected the results of the study. Fewer students were available in the control school than in the experimental schools thus making it impossible to match all students in the experimental school with students in the control school. All control students could not be matched from the experimental classes due to the peculiarity of the assignment of materials to the various levels.

Control school students were probably influenced by the teacher variable more than those students from the experimental schools. For example there were twelve (12) experimental teachers' and only four control teachers in the project.

TABLE 2. A STATISTICAL COMPARISON OF PRE- AND POST-TEST MEANS IN SCHOOLS GROUPING STUDENTS HOMOGENEOUSLY AND ASSIGNING VARIOUS MATERIALS TO THESE CLASSES.

School	Teacher	Materials	N	Harrison Stroud $\bar{X}$	t-Value	California Reading $\bar{X}$	t-Value
Level I							
Price	A	SRA	18	316.11	0.56	73.06	0.59
Hastings	B	Open Court	19	362.00		70.74	
Price	A	SRA	18	316.11	0.35	73.06	0.02
Calhoun	C	Open Court	21	308.71		73.62	
Hastings	B	Open Court	19	362.00	2.28*	70.74	0.84
Calhoun	C	Open Court	21	308.71		73.62	
Level II							
Price	D	Macmillan	11	181.36	1.42	61.00	0.91
Hastings	E	SRA	15	197.13		64.27	
Price	D	Macmillan	11	181.36	2.15*	61.00	1.39
Calhoun	F	Macmillan	17	146.12		55.29	
Hastings	E	SRA	15	197.13	4.17*	64.27	2.27*
Calhoun	F	Macmillan	17	146.12		55.29	
Level III							
Price	G	Macmillan	13	109.69	0.06	54.92	.86*
Hastings	H	Macmillan	18	110.33		45.11	
Level IV							
Price	I	Variety	14	20.71	2.01	38.50	0.73
Hastings	J	Parkinson & Macmillan	17	36.53		34.41	

The movement of students from school to school, as families moved to new neighborhoods, may have affected the achievement of groups of students involved as teachers had to change their methods in order to help students who had been studying different materials. No teachers were moved from the school in which they taught the previous year. This probably resulted in an inequitable distribution of teachers. Exceptions to proposed assignment procedures, to provide some degree of racial balance, caused the homogeneously assigned classes to have a wide range of Harrison Stroud pre-test scores. One experimental school added a new first grade teacher at midyear, and students from the other first grade experimental classes were selected to fill this class. As a result, several experimental class means were affected.

Much of the material for the Crossett Reading Project arrived too late to be of maximum benefit to the students. The Open Court teachers did not have the advantage of a pre-school workshop as did Macmillan teachers. Several teachers had student teachers in their rooms, and this must have provided some advantage to youngsters in their classes.

Second Year

A. & B. Students in the experimental schools receiving instruction with the Open Court Correlated Language Arts Program will achieve at a higher level than students from the control school using the Macmillan Basic Reading Program as indicated by the California Reading Test (form A).

Teachers in both programs were trained in how to use their program properly. Each teacher had equal materials to work with

and equal in-service training.

Students in the experimental schools will achieve on or above 1.9 reading level at the end of the school year 1971-72 with the exclusion of children with learning disabilities.

Children with possible learning disabilities were given a WISC and several other tests by the school counselor. The only children excluded from the study were those who tested out as EMR's.

Students in the experimental schools will have a better attitude toward reading than those in the control school.

An attitude inventory was administered to all first grade students in the program. Results of the inventory revealed a better attitude toward school and reading by students in the experimental classes.

The non-graded program will be successful in individualizing instruction as measured by increased variations in student achievement scores.

Student achievement scores for the end of the second year of operation were significantly higher than scores for first year students at the end of the first year of operation. Specific results can be found in the evaluation section.

C. All project objectives were fully met in the Crossett first grade reading project. The following narrative includes additional analysis of some first year data followed by a description of the findings of the Crossett evaluation. Additional first year evaluation were conducted during the second year and are presented first.

Additional Evaluation of First Year. Many factors about the first year research design were undesirable. For example, the use of t-tests for multiple comparisons is not statistically sound. The t-test is a strong test of significant differences when comparing two groups but for comparisons of three groups the basic assumption of independence of comparisons is violated. This was the case in the comparison of the three sets of materials in the Crossett Project's first year. Based upon this, an evaluation was made comparing the results by the analysis of covariance.

Due to the assignment of materials only the results of the Control school were suitable for the analysis of covariance. The pre-test scores were to be used as the covariates. For the homogeneously grouped classes the regression coefficients were not homogeneous, resulting in no possible analysis.

Three classes from the control school were selected for analysis. This provided a basis for comparing the three programs - Open Court, Macmillan, and SRA. The three teachers were of approximately equal ability and the three classes were heterogeneously grouped.

Table 3 presents the pre-test means, raw score post-test means, adjusted raw score post-test means, and adjusted grade equivalent means. Initially the Macmillan class was highest with a mean of 227.35; SRA was second with a mean of 213.19; and Open Court was lowest with a mean of 173.48. The unadjusted post-test raw score means showed Open Court highest with a mean of 66.65; SRA second with a mean of 61.67 and Macmillan lowest with

TABLE 3. ANALYSIS OF COVARIANCE ON READING MATERIALS FOR THE FIRST YEAR OF THE CROSSETT READING PROJECT.

Program	Pre-Test Means	Raw Score Post-Test Means	Adjusted Raw Score Means	Adjusted Grade Level Means
Macmillan	277.35	61.04	58.74	1.3
SRA	213.19	61.67	61.67	1.7
Open Court	173.48	66.65	69.75	3.1

a mean of 61.04. When these were adjusted the Open Court mean was 69.75 while SRA was 60.77 and Macmillan was 58.74. The adjusted grade equivalent means were:

Open Court	3.1
SRA	1.7
Macmillan	1.3

Comparison of the adjusted means are presented in Table 4. Schaeffe's Multiple Comparisons of means indicated that Open Court was significantly higher than Macmillan beyond the 0.01 level and significantly higher than SRA beyond the 0.05 level. A strength of association test produced an Omega-Square of 0.24, indicating considerable practical significance.

Second Year Evaluation. The basic research questions which the Crossett First Grade Reading Project attempted to answer were:

1. Will students in a correlated language arts reading program (Open Court) achieve significantly more than students in a basal reading program (Macmillan)?

2. Will students in a correlated language arts program make greater gains in reading vocabulary than students in a basal reading program?

3. Will students in a correlated language arts program make greater achievement gains in reading comprehension than students in a basal reading program?

4. Will a correlated language arts approach to reading produce significantly higher writing skills in first grade students than a basal reading program?

5. Will the attitude of students in a correlated language arts reading program be significantly higher than those of students in a basal reading program at the end of the first grade?

In an attempt to answer these questions first grade students in the Crossett School System were divided into two groups.

TABLE 4. SCHAEFFE'S COMPARISONS OF ADJUSTED MEANS

Comparison	F-Ratio Obtained	F-Required at 0.05*	F-Required at 0.01** Levels
Macmillan vs. SRA	0.36	6.28	9.90
Macmillan vs. Open Court	13.46**	6.28	9.90
SRA vs. Open Court	9.00*	6.28	9.90

The students at the Price Elementary School were chosen to use the basal Macmillan reading program which was in use at the system. The students in the Anderson, Calhoun and Hastings Elementary Schools used the Open Court Correlated Language Arts Reading Program. Each group was supplied with all the materials recommended by each company.

Students were pre-tested with the Harrison Stroud Reading Readiness Profile in September of each year. They were post-tested in May with the California Reading Achievement Test. Second graders were tested in May of the second year with the California Reading Achievement Test.

Statistical Methods. The second year analysis and the analysis of covariance to adjust out initial inequalities of the groups using the Harrison Stroud pre-test scores as covariates. The independent variable used was a type of reading program and the dependent variable was the post-test scores on the California. This procedure was used for three analyses of reading achievement scores. The analyses of covariance were calculated for total reading grade equivalents, vocabulary grade equivalents and comprehensive grade equivalents.

A fourth analyses involved the comparison of the writing skills of the two groups. Each teacher asked each child to write a story for her. The stories were all written on a Friday morning. Each child was told to write about anything he wished. Teachers did not assist the children in any way. The stories were collected and each child assigned a number. Three independent judges from other schools were selected to score the stories.

Two of the judges were first grade teachers and the third a college teacher in early childhood education. Each judge was asked to score each paper and to write the score on a scoring sheet beside the child's assigned number. No marks were made on the paper and each judge had no knowledge of the others scores.

The judges were asked to give each a score from 1 to 10 keeping in mind four areas - spelling, grammatical correctness, story content and originality.

From these three scores a total score for each child was obtained. These total scores were then compared by means of a t-test.

Each child was given an 18-point attitude inventory by a Title III staff member. These were anonymous. The total attitude scores of the two groups were compared by a simple t-test.

Findings. Three separate data analyses were made of the second year of the project. The first analyses included the analysis of the first grade students' achievement in total reading, vocabulary and comprehension; the comparison of the writing skills of the first grade students; and a comparison of the attitudes of the first grade students. The second analyses involved the comparison of the variance of the scores of first grade students in the non-graded program for 1972 and the variance of the score of the first grade students in the 1971 traditional program to attempt to determine the effectiveness of the individualization of instruction in the non-graded program.

The third analyses was a comparison of the achievement of the second grade students in each of the three first year

programs to determine the long range effects of the programs.

First Grade Achievement. The analysis of the reading achievement scores of the first grade students in the second year of the project was made by using the analysis of covariance with the pre-test scores of the students as the covariates. Initially the students in the Macmillan program at Price Elementary had a higher pre-test mean than students in the Open Court Program. Table 5 shows the pre-test means for each of the first grade classes, the post-test means and the adjusted mean for each calss on vocabulary, comprehension and total reading. These means are in terms of grade equivalents. Pre-test means are in raw score units. The overall grand mean on the pre-test for all students was 67.04. All classes in the Price School were above the overall mean. This was the Macmillan school.

Table 6 shows the results of the three analyses of covariances on vocabulary, comprehension and total reading grade equivalents on vocabulary. The Open Court classes averaged almost five points lower on the pre-test but averaged slightly more than 3 months higher on the post-test. These means were adjusted by the formula $\bar{X}' = (67.04 - \bar{Y})\ .035 + \bar{X}$. Thus the mean for Open Court was adjusted up to 2.54 and the mean for Macmillan down to 2.02 because the Open Court classes were lower than the grand mean and the Macmillan classes mean was much higher than the grand mean. Adjusted means are simply the post-test means that each group would have had if they had had a mean equal to the grand mean on the pre-test. Thus if the Macmillan and Open Court classes had been equal initially the difference in achievement would have been 5 months.

TABLE 5. MEANS AND ADJUSTED MEANS FOR FIRST GRADE TEACHERS

School Teacher	Pre-Test	Post-Test					
		Vocabulary		Comprehension		Total	
		Mean	Adjusted	Mean	Adjusted	Mean	Adjusted
Anderson							
Harper	64.83	2.59	2.68	2.40	2.47	2.51	2.58
McDougald	65.00	3.01	3.09	2.32	2.38	2.68	2.74
Willard	67.72	2.39	2.36	2.69	2.67	2.49	2.47
Calhoun							
Grider	66.00	2.63	2.67	2.12	2.15	2.42	2.45
Rice	65.00	2.58	2.66	1.90	1.96	2.33	2.39
Robinson	62.78	2.39	2.56	2.01	2.14	2.28	2.41
Hastings							
Harper	65.33	2.29	2.36	2.09	2.14	2.15	2.20
McGehee	64.30	2.37	2.48	1.97	2.05	2.20	2.28
Murphy	67.60	2.18	2.16	2.20	2.18	2.17	2.15
Price							
Gill	71.31	2.28	2.11	2.17	2.04	2.18	2.05
Grigsby	72.27	2.16	1.95	2.22	2.06	2.12	1.96
Mitchell	68.27	2.04	1.99	1.66	1.62	1.91	1.87

TABLE 6. ANALYSIS OF COVARIANCE RESULTS ON READING ACHIEVEMENT

	Harrison Stroud Pre-Test	California Post-Test Mean	California Post-Test Adjusted Mean	d.f.	F-Ratio
Vocabulary					
Open Court	65.74	2.49	2.54	1/242	F= 36.48
Macmillan	70.59	2.16	2.02		
Comprehension					
Open Court	65.74	2.17	2.21	1/242	F= 8.61
Macmillan	70.59	2.01	1.90		
Total Reading					
Open Court	65.74	2.36	2.40	1/242	F= 17.33
Macmillan	70.59	2.06	1.95		

Values required for Significance $F_{.05} = 3.89$

$F_{.01} = 6.76$

The F-ratio obtained for the comparison was 36.48. This ratio is very significant because the F required for significance at this 1% level is only 6.76.

The analysis of covariance on the comprehensive post-test means indicated that there was initially a difference of 1.6 months in achievement. The means were adjusted by the formula $\bar{X}'j = (67.04 - \bar{Y}j)\ .03 + \bar{X}j$. The adjusted means of 2.21 for Open Court and 1.90 for Macmillan indicate that if the groups had been equal initially the difference would have been 3 months in favor of the Open Court Program. This difference produced an F-ratio of 8.61 which was significant beyond the .01 level.

The total reading grade equivalent for Open Court was 2.40 and for Macmillan it was 1.95. These means were adjusted by the formula $\bar{X}'j = (67.04 - \bar{Y}j)\ .03 + \bar{X}j$. The adjusted mean indicated that the Open Court classes would have been an average of $4\frac{1}{2}$ months higher on the post-test than the Macmillan class if the groups had been equal initially. The F-ratio obtained was 17.33 which is significant beyond the 1% level.

First Grade Writing Skills. The total writing skills score for each child was used to compare the writing skills of the students in the Open Court and Macmillan classes. Each student had a possible score of 30. The means for the Open Court and Macmillan classes are presented in Table 7. The Open Court classes had a mean of 12.43 and the Macmillan classes a mean of 11.00. An independent t-test was used to

TABLE 7. WRITING SKILLS AND ATTITUDES - CROSSETT FIRST GRADERS

	Program	Achievement Pre-Test	Post-Test	St. Error of Means	t-Value
Writing Skills	Open Court	65.74	12.43	10.85	1.682
	Macmillan	70.59	11.00		
Attitudes	Open Court	65.74	14.24	0.36	2.82
	Macmillan	70.59	13.41		

Required t-Values: 0.05 = 1.645
0.01 = 2.326

compare the difference in the means. The standard error of the mean was 0.85. The t-value obtained was 1.682 which was significant at the 0.05 level with Open Court having the higher mean score.

An analysis of covariance was not made because the results were obviously significant. An analysis of covariance would have increased considerably the difference in favor of Open Court.

First Grade Attitudes. Table 7 contains the mean attitude scores for the Open Court and Macmillan classes. The mean attitude score on an 18-point attitude scale for Open Court was 14.24 and for Macmillan was 13.41. An independent t-test obtained a t-value of 2.82 which was significant beyond the .01 level. The Open Court students had a significantly better attitude than the Macmillan students on the staff developed attitude inventory.

Ability Grouping Vs. Non-Graded. The only valid comparison of a non-graded program with a traditional program is the comparison of the variances of the students post-test scores by means of a simple F-ratio. This is because a non-graded program is based upon the principal of individualized instruction and a successful program of individualized instruction will increase the variance of the students scores in the class. The only data available in the project for this comparison were the first grade scores from the first year of operation when the program was a traditional program and the post-test grade equivalents

from the second year of operation which was the first year of the non-graded program.

Table 8 ccntains the variance of the scores of the 270 students in the first year and the 245 students in the second year of operation. The variance for the non-graded program was 0.74 and for the traditional program was 0.14. An F-ratio of 5.64 was obtained. This value was significant beyond the 2% level. Thus the non-graded program did in effect increase the variance of the scores.

Second Year Achievement. An analysis of the second grade reading achievement scores of the students who were in the SRA Macmillan and Open Court Programs during the first grade was made. During the second year all used the Macmillan Second Grade Program. The statistical analysis by the analysis of covariance indicated no significant difference in either the mean achievement scores at the end of the second or in the mean gain scores for the second grade.

The students who had had the SRA Lift-Off Program in the first grade had the highest mean grade level equivalent at the end of the second year and the highest gain in grade level during the second year. These gains were computed from May, 1971 and May, 1972 scores on the California Reading Achievement Test. However, the SRA groups pre-test mean was the highest at 80.51. The Open Court group had the second highest pre-test mean and the second highest post-test mean. The Macmillan group had the lowest pre-test mean and the second highest mean gain in grade level during the second grade.

TABLE 8. COMPARISON OF NON-GRADED AND ABILITY GROUPED FIRST GRADE STUDENTS

Program	Year	Number	Variance	F-Ratio
Non-Graded	1972	245	0.74	F= 5.64
Ability-Grouped	1971	270	0.14	

F required for significance at the 0.10 level = 1.26
0.02 level = 1.39

Crossett No. 2
An Exemplary Special Education Work Center

1. Objectives:

Specific behavioral objectives will be written to develop academic and social skills by involving the students in real-life situations. Specific skills will be developed to:

1. improve the child's self concept.
2. enable the child to interact successfully with others.
3. help the child obtain and manage, with limited supervision, materials and money.
4. enable the child to progress academically according to his mental expectancy.

2. Activities:

Teachers received in-service training in writing behavioral objectives in a pre-school workshop. Behavioral checklists were developed on three levels: primary, intermediate, and junior high. Teachers checked each student's individual development using the behavioral checklist. Behavioral objectives were written for each student in an area where a "no" response occurred on the checklist. Additional objectives were written to develop academic skills as the student progressed. Instruction was based on the behaviorally stated objectives.

The Work Center was divided into four areas: homemaking, workshop, handicraft and physical activity. Each class used the center one four-hour period per week. Instruction occurred through real life situations. Some of the activities were as follows: (1) making and hanging curtains, (2) making and

hanging plaques on walls, (3) embroidering dish towels, (4) making colorful felt pot holders, (5) making magnetic designs to go on the refrigerator and metal cabinet, (6) making aprons to use while cooking in the center, (7) refinishing cabinets of two tredle-type sewing machines, (8) painting walls and storage cabinets, (9) painting table and chairs, and (10) waxing the floors.

The teachers employed practical techniques and methods to achieve success with the new activities. Students actually cooked, sewed, washed, ironed, sawed lumber, hammered nails into wood, and performed numerous other practical tasks. Adequate supervision was provided to prevent injury.

The work with handicrafts played an important role in the success of the work center. A Christmas program and bazaar were conducted involving all the special education students. The students were responsible for their bazaar booth displays and the actual selling of their handicrafts. Some of the items sold were coin purses, curler caddies, piggy banks, key chains, bracelets, yarn flowers, pot holders, polished rock jewelry, wall plaques, hot pads, napkin holders, decorated match boxes, bookmarks, covered coat hangers, candles, Christmas decorations, and numerous other items.

Units of study on food of all types helped provide pleasant experiences for the students. Emphasis was placed on shopping, preparing and serving food, table manners, social skills, proper diet, and cleanliness. The students, under adult supervision, prepared foods ranging from snacks to full meals.

Other projects conducted in the work center focused on postal services, writing letters, good grooming, care of the teeth, the five senses, holidays, gardening, measurement, and psychomotor skills. Field trips in the community increased the students' knowledge of the location and use of public facilities, stores, and churches.

3. Data:

The evaluation of the Crossett Special Education Project was primarily concerned with teacher diagnosis of students deficiencies in certain skills areas by means of the behavioral checklist presented in the previous sections. Each student was administered the behavioral checklist and then behavioral objectives were written for the child in each of the areas. The lack of any norms for comparisons inhibited any experimental design. Therefore, the data presented is of a descriptive nature.

First Year Evaluation. The first year evaluations were based upon the percentages of behavioral objectives achieved and upon Crossett Principals comments. A numerical summary of the behavioral objectives written by skill areas at the primary level is presented in Table 9. Table 10 depicts the numerical summary of the behavioral objectives written for the intermediate level special education students.

Crossett Elementary Principals' Comments:

The Special Education Work Center provided a home-like situation conducive to learning for the mentally retarded child.

Through the cooperation of all special education teachers

TABLE 9. NUMERICAL SUMMARY OF BEHAVIORAL OBJECTIVES WRITTEN FOR PRIMARY SPECIAL EDUCATION STUDENTS.

Skills Area	Number of Students	Diagnosis of Student Behavior (No. of check-list items checked "no" or "sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved	Percentage of Behavioral Objectives Achieved
Psychomotor	56	371	175	120	69
Social	56	322	263	159	60
Arithmetic	56	296	159	119	75
Health	56	465	243	149	61
Communicative	56	565	264	150	57

TABLE 10. NUMERICAL SUMMARY OF BEHAVIORAL OBJECTIVES WRITTEN FOR INTERMEDIATE SPECIAL EDUCATION STUDENTS BY ONE SPECIAL EDUCATION TEACHER.

Skills Area	Number of Students	Diagnosis of Student Behavior (No. of check-list items checked "no" or "sometimes")	Number of behavioral Objectives Written	Number of Behavioral Objectives Achieved	Percentage of Behavioral Objectives Achieved
Social	8	68	37	21	57
Arithmetic	8	56	34	32	94
Health	8	28	28	26	93
Communicative	8	57	26	20	77

and the administration each class was strengthened in the following ways:

(1) The center provided experiences for the pupils that could not have been met adequately in the classroom. For example, kitchen facilities were provided where children participated in cooking and serving meals.

(2) The program extended provisions for meeting students' needs through provision of psychomotor training.

(3) Learning seemed to be effective for all pupils due to the various activities that were provided through situations evolving around real life situations.

(4) There were a few problems, such as transporting the students from the different schools to the center. Not having adequate space presented a small problem. These problems were not insurmountable.

(5) The pupils' reactions to the center were warm and responsive, They looked eagerly to "their day" there.

(6) One half day was really not enough time to complete a project, however, the teachers adjusted to the time very well.

(7) The center has brought about a togetherness of all the students and personnel, which is in itself an asset to the district. Their work was fruitful in many areas; areas of organization, cooperation, and particularly in the area of devising an excellent method of evaluation of special education students and planning objectives for them.

(8) The teachers' aide was a strong and welcomed point in the addition of the center.

(9) We can say without reservation that our help from the Title III staff from Monticello and from the State level has been excellent.

(10) We feel that the center was a success and that we were fortunate indeed to have had the opportunity to participate in this program.

SAESC Staff Comments:

The special education work center has provided many successful experiences for the youngsters involved in the program.

Instruction was planned to meet individual needs based on the information obtained from the checklist. The writing of behavioral objectives increased the teachers' awareness of what they were trying to accomplish with each child, thus producing more thorough planning and preparation. Student success was enhanced because the atmosphere was relaxed. The students enjoyed what they were doing because it was not the same curriculum they had so often failed in mastering.

The success of the first year project was not measured by standardized tests results. Some of the factors that indicate success are the achievement of many objectives set for individual students, the beaming faces of retarded children being involved, and the happiness of being successful in a program designed especially for them.

Second Year.

A. The composition of the classes dictated that instruction be structured to meet individual needs. The special education teachers will write behavioral type objectives to meet the needs of each student.

Specific behavioral objectives will be written to develop academic and social skills by involving the students in real-life situations. Specific skills will be developed to:

1. improve the child's self concept.
2. enable the child to interact successfully with others.
3. help the child obtain and manage, with limited supervision, materials and money.
4. enable the child to progress academically according to his mental expectancy.

B. Various activities were conducted in the work center to accomplish the goals desired. Some of these activities were as follows: (1) making and hanging curtains, (2) making and hanging wall plaques, (3) embroidering dish towels, (4) making colorful pot holders, (5) making aprons to use while cooking in the center, (6) painting some old furniture, (7) waxing the floors, (8) cleaning the bathroom, (9) making the bed, (10) using the washing machine, (11) shopping for groceries, (12) makinghandicraft items to sell at the Christmas bazaar, (13) meal planning, (14) cooking and serving food of various kinds, (15) mowing and sweeping the yard, (16) personal grooming, (17) manners, (18) tours to all community facilities, (19) planting a garden, (20) inviting parents and school officials to the center for a special meal or treat.

The successful experiences these EMR children had in the work center proved to be a great motivator for them in their school work. They developed many skills that will enable them to be more independent members of our society as adults. They have attained a sense of pride and dignity about themselves and their capabilities.

The results of this project may be beneficial to other special education administrators interested in evaluation. Evaluation of a program should be measured primarily in terms of student achievement. Since standardized tests alone, do not provide adequate data for properly evaluating special education programs, the evaluation procedures used in this project may help others evaluate their special education program more effectively.

The second year evaluation model was similar to that of the first year with the addition of a summary of the mean grade equivalent gains on the Wide-Range Achievement Test. During the second year more behavioral objectives were written in each skill area. However, there were more students in each class. There were actually fewer objectives written per child during the second year. During the second year the behavioral objectives were collected and tabulated by the SAESC Special Education Coordinator.

A numerical summary of all primary level students indicated that 197 spychomotor objectives had been written and 158 of them had been achieved for a percentage of 80.2; 313 social objectives were written and 222 had been achieved or 70.9 percentage; 201 arithmetic objectives and 158 achieved for a percentage of 74.0; 223 health objectives out of 290 had been achieved for a 76.9 percentage; and 235 communicative skills objectives had been achieved for a 78.3 percentage. A summary of the number of objectives written, achieved, and the percentages for each skill area for each teacher at the primary level is presented in Table 11. Table 12 contains a numerical summary for the intermediate and junior high levels.

A comparison of the percentages achieved indicates that a higher percentage of objectives were achieved during the second year.

The following shows the two years' percentages for each area for the primary level:

	1971	1972
Psychomotor	69	80.2
Social	60	70.9
Arithmetic	75	74.0
Health	61	76.9
Communicative	57	78.3

TABLE 11. NUMERICAL SUMMARY OF BEHAVIORAL OBJECTIVES WRITTEN FOR CROSSETT SPECIAL EDUCATION STUDENTS - PRIMARY LEVEL

Teacher	Skills Area	Number of Students	Diagnosis of Student Behavior	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved	Percentage of Behavioral Objectives Achieved
A	Psychomotor	18	105	90	64	71.1
	Social	20	116	143	71	49.7
	Arithmetic	20	97	96	58	60.4
	Health	20	178	139	78	56.1
	Communicative	20	222	158	113	71.5
B	Psychomotor	17	192	37	37	100.0
	Social	17	113	33	33	100.0
	Arithmetic	17	75	32	32	100.0
	Health	17	195	44	44	100.0
	Communicative	17	170	20	20	100.0
C	Psychomotor	19	285	18	16	88.9
	Social	19	216	94	88	93.6
	Arithmetic	19	170	35	33	94.3
	Health	19	263	65	65	100.0
	Communicative	19	332	60	59	98.3
D	Psychomotor	18	146	52	41	78.8
	Social	18	116	43	30	70.0
	Arithmetic	18	88	38	35	92.1
	Health	18	102	42	36	85.7
	Communicative	18	178	62	43	69.4

TABLE 12. NUMERICAL SUMMARY OF BEHAVIORAL OBJECTIVES WRITTEN FOR CROSSETT SPECIAL EDUCATION STUDENTS - INTERMEDIATE LEVEL AND JUNIOR HIGH LEVEL

Teacher	Skills Area	Number of Students	Diagnosis of Student Behavior	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved	Percentage of Behavioral Objectives Achieved
			Intermediate Level			
D	Social	2	20	10	6	60.0
	Arithmetic	2	9	5	5	100.0
	Health & Safety	2	5	4	3	75.0
	Communicative	2	15	9	8	88.9
E	Social	8	56	21	11	52.4
	Arithmetic	8	22	30	22	73.3
	Health & Safety	8	8	0	0	0.0
	Communicative	8	57	26	19	73.0
			Junior High Level			
E	Social	3	14	7	7	100.0
	Home & Community	3	16	9	9	100.0
	Health	3	18	6	6	100.0
	Safety	3	2	0	0	0.0
	Cultural Heritage & Current Events	3	16	1	1	100.0
	Vocational	3	9	5	5	100.0
	Communicative	3	27	6	6	100.0
	Number Concepts	3	49	11	11	100.0

This indicates that the teachers improved in their objective writing the second year. They were able to write objectives that were more realistic for the children.

A summary of pre-test and post-test means for each class and grade level gains on the Wide Range Achievement Test are presented in Table 13. The grade level equivalents indicate strong gains in the arithmetic achievement. Since no previous gains for these classes or gains by other special education classes were available, no comparison can be made. Therefore, no conclusions can be made based upon the results presented.

Principals' Comments:

(1) The Center provides an environment and atmosphere that is conducive to learning the skills most needed by the educable mentally retarded child.

(2) Creative activities are provided that enrich the background of each child.

(3) The Center provided the space for activities that permit each child to participate in learning situations in which he can experience the success needed to improve his self-concept.

(4) The Center has provided learning experiences for individual special education students from each of the four elementary schools that could not have been adequately met in their regular classroom.

(5) Space is limited but proved to be a very valuable learning center.

(6) Experiences such as painting, cooking, sewing and gardening, to mention only a few, were provided that would have been impossible to provide in four separate locations.

(7) The program centered around psychomotor activities but additional activities were provided to assist each student to become a better home, family and community worker.

TABLE 13. SUMMARY OF CROSSETT SPECIAL EDUCATION CLASSES' GRADE EQUIVALENT MEAN SCORES ON THE WIDE RANGE ACHIEVEMENT TEST

Teacher	Reading			Spelling			Arithmetic		
	Sept.	May	Gain	Sept.	May	Gain	Sept.	May	Gain
A	1.20	1.60	0.40	1.32	1.60	0.28	1.40	2.20	0.80
B	1.40	1.62	0.22	1.10	1.53	0.43	1.20	2.10	0.90
C	1.00	1.40	0.40	1.00	1.30	0.28	0.90	1.60	0.70
D	1.20	1.60	0.40	1.20	1.60	0.40	1.40	2.40	1.00
E	2.30	2.35	0.05	2.20	2.50	0.30	2.60	3.00	0.40

(8) This training has been effective for each individual student since a variety of activities were provided that involved real-life experiences.

(9) Supervision is considered excellent as a full-time teacher aide and a special education supervisor were available to assist the regular teacher and aide.

(10) Student response to the Center is excellent as each individual student eagerly awaited his visit to the Center each week.

Comments: Roy Wood, Area Supervisor
Special Education
Department of Education

It is my feeling that the Crossett Special Education Work Center has bridged the gap to and made possible the development of sequence and continuity in the instructional program. As a result of this activity, the curriculum has been geared to home living skills and is relevant to the children's needs.

The behavioral checklists the teachers have developed have given direction to the program and, consequently, the teachers' planning, organizing and teaching techniques have been upgraded significantly. The teachers have progressed to the point to where they can write measurable objectives for each individual student.

The Christmas Program and bazaar allowed the students to earn and manage their money. This activity could not have been so successful had the Center not been available.

It is my opinion that the Crossett Center can and should function as a model in that the teachers have developed a sound evaluation scheme in light of their objectives. I feel privileged to have had the opportunity to learn from the rich

experiences the Center has produced.

SAESC Staff Comments: The Crossett special education teachers are an active group that are putting forth every effort to provide the best services possible for the retarded children in their school district. The work center project has provided the opportunity for the teachers to meet together to plan, organize, share, and evaluate their work.

The teachers developed behavioral checklists that are very practical and helpful in planning individual work. They use the checklists as a guide for writing objectives for each student. The quality objectives written this year were much better than last year. Administering the checklist and writing objectives has made the teachers more aware of what they are really doing for each individual in their class.

The experiences the children have had in the work center are numerous. Concepts that were taught in the classroom were made real in the center. A retarded child will retain what is learned in a concrete situation much better than what is taught in abstract form. Activities, such as the Christmas Program and bazaar, allowed the children to perform before a large group and to sell what they had made with their own hands, thereby improving their self-concept.

The work center involved 79 students the first year, 89 students the second year and is projected to serve 110 students next year. The Crossett school district is expanding the center facilities to include two more classrooms. The additional floor

space was badly needed. It will provide room for more individual and small group work. Adequate supervision will be maintained. The students will be involved in learning through doing again next year. The work center program will be funded through the local school district.

This project was designed especially for retarded children. The evaluation procedure used is one that other school districts could use to measure student achievement in the evaluation of their special education program.

Parkdale Pilot Project
An Exemplary Lower Elementary Reading Program

First Year.

1. Objectives:

Objective A: Classes including first, second, third, and fourth grade students will achieve at least one full grade level in reading after receiving instruction with Open Court instructional materials during the school year as measured by SRA pre- and post-tests administered by the school counselor.

Objective B: Open Court classes will show a greater increase in reading skills than the Macmillan group as measured by SRA pre- and post-tests administered by the school counselor.

2. Activities:

The project became a non-graded one because of the low reading ability of the second year students who needed more readiness materials, and the low reading ability of the third and fourth year students, who needed materials on lower reading

levels. Teachers received all the material recommended for the program they were using. Teachers received pre-school in-service training from consultants from it's respective program. The SAESC Reading specialist monitored the teachers in their classes. Regular in-service training was conducted to show the teachers how to best utilize all of the reading materials at their disposal.

3. Data:

First, second, third, and fourth grade students did not achieve at least one full grade level in reading after receiving instruction with Open Court instructional materials as measured by SRA pre- and post-tests.

Increases in pre- and post-test mean reading scores were not available for first year students, as first year students had no pre-test reading scores. Second, third, and fourth year students studying Open Court had an average increase in mean reading score of 5.3 months. Second, third, and fourth year students studying Macmillan had a mean reading score increase of only 3.4 months. This difference was not attributed to the superiority of Open Court materials alone, and the intervening variables are discussed later. Results are presented in Table 14.

4. Comments:

Several questions have arisen concerning these data:

(a) Was this objective valid? That is, was it meaningful to expect these students to achieve one full year in reading as measured by nationally normed tests?

(b) Were the teachers ready to begin teaching the Open Court Correlated Language Arts Program?

TABLE 14. PARKDALE ELEMENTARY SCHOOL READING PROJECT STATISTICAL SUMMARY

Teacher	Materials	Grades	N	Sept., 1970 SRA Total Reading G.E. $\bar{X}$	May, 1971 SRA Total Reading G.E. $\bar{X}$	Average Change in Grade Equivalent	N	Sept., 1970 SRA Ability $\bar{X}$	Feb., 1971 SRA Ability $\bar{X}$	Measured IQ Change
A	Open Court	1	12		1.1-		11	88	93	5
		2	6	1.0-	1.5-	0.5-	4	91	94	3
		1,2	18		1.3		15	83	93	10
B	Macmillan	1	13		1.3		12	81	92	11
		2	6	1.0-	1.7	0.7-	4	86	94	8
		1,2	19		1.4		16	83	93	10
C	Open Court	2	6	1.2	2.3	1.0	6	94	98	4
		3	2	2.2	2.7	0.5	2	95	97	2
		4	10	2.6	3.0	0.4	9	76	85	9
		2,3,4	18	2.2	2.8	0.6	17	85	92	7
D	Macmillan	2	5	1.3	1.6	0.3	4	86	87	1
		3	7	2.7	2.8	0.1	5	92	89	(3)*
		4	7	2.6	3.0	0.4	7	76	82	6
		2,3,4	19	2.1	2.4	0.3	16	84	86	2

* Negative Change

(c) Were the teachers certified and capable of teaching reading to disadvantaged students?

(d) Can one properly evaluate the effects of the Open Court Correlated Language Arts Program on the reading achievement of Parkdale students in one year?

The SAESC staff does not think that an average reading achievement gain of one year was a valid objective for Parkdale youngsters. Although the SAESC staff is disappointed with the achievement gains reported, it is our firm belief that these students could have made significant gains under better conditions. The teachers were not prepared to begin the project when school began in September, 1970. They were not aware of their particular teaching assignments until late summer, and even then a change was made to fill a vacancy in late August, 1970. This change caused a Macmillan class to be taught by a high school teacher. This teacher was not certified for elementary school, and his students did not achieve as much as his counterpart's students achieved. His inexperience in teaching reading may have been a factor. One year is too little time to properly evaluate the project.

Several factors may have affected the results of this study. Neither Open Court teacher had the expertise to properly teach these materials to students in Parkdale Elementary School, and the SAESC Reading Specialist did not have time to properly train these teachers in the proper administration of Open Court materials prior to the opening of school.

Although the Open Court class of older students averaged about twice as much in pre-, post-test gains as the Macmillan

class of older students, this gain cannot be attributed to Open Court materials alone.

One Macmillan teacher was not a certified elementary teacher, and he may not have been effective as an elementary reading teacher. His students' mean reading score increased less than the matched Open Court class's mean reading score. His second year students' mean reading score increased less than the matched group of Open Court second year students' mean score. His third year students' mean reading score increased less than the matched group of Open Court third year students' mean reading score. His fourth year students' mean reading score increased the same as the matched group of Open Court fourth year students' mean reading score.

The objective naming one year gain as a normal expectation for these students may have been invalid. One does not know that these students had the potential ability for performing at the national norm for their age group on a standardized reading test. For example, the fourth year students averaged about 2.1 years on the reading pre-test. They had advanced about 0.5 years in reading achievement per year in school, prior to the pre-test. It may have been too optimistic to expect them to increase their reading level by one year during 1970-71.

Second year students in the Open Court class for younger students increased their mean reading score 0.5 years. Second year students in the Macmillan class for younger student increased their mean reading score 0.7 years. These increases represent only six student in the Open Court class and six

students in the Macmillan class; therefore, such small increases made by a few students studying in only two classrooms are not significant.

As in other projects, the teacher variable is very hard to control, and it must have affected the results of the Parkdale project. Replications of experimental and control classes need to be planned when possible, and it is impossible to plan these replications at Parkdale Elementary School because of the small enrollment.

Second Year 1971-72

A. Experimental classes including first, second, third, and fourth grade students will achieve at least one full grade level in reading after receiving instruction with Open Court instructional materials during the school year as measured by pre- and post- reading tests administered by the reading staff.

Students were pre-tested with the SRA Reading Achievement Form C. Teachers received many hours of in-service training on how to best utilize the reading program they were teaching and how to supplement their program, when necessary. The teachers also attended training workshops conducted by weekly visits to the school to work with the teachers and students in both programs.

B. Experimental classes will show a greater increase in reading skills than the control group after receiving instruction with Open Court materials as measured by pre- and post-tests administered by the SAESC staff.

Students were pre- and post-tested with SRA's Reading Achievement Series. Form C was used as a pre-test and Form D was used for post-testing. The SAESC staff administered and scored both pre- and post-tests. First graders were pre-tested with the Harrison Stroud Reading Readiness Profiles.

C. Methods and Procedures. The students in grades 1 - 4 of Parkdale Elementary were divided into two classifications for the purpose of analysis. The first classification included all beginning first grade students. The second classification contained all other students who were in grades 1 - 4. This includes students repeating the first grade.

Two Open Court classes, one of first and second year students, and one of second, third, and fourth year students, were established. Two Macmillan classes, one first and second year students, and one of second, third, and fourth year students, were established. Each Open Court class was matched with a Macmillan class.

All students in grades 2 - 4 were administered the SRA Achievement Series, Reading, Form D, as a pre-test and beginning first year students were given the Harrison Stroud Reading Readiness Test. All were post-tested in May, 1972 with the SRA Achievement Series. Scores were compared using an analysis of covariance.

The analysis for the second year of operation, as shown in Table 15, indicated that the students in Level I (beginning first grade) who were taught using the Open Court Program had a

TABLE 15. PARKDALE READING ACHIEVEMENT RESULTS

Level	Grade	N	Program	Pre-Test	Change	Post-Test Mean	Post-Test Adjusted Mean	F-Ratio
I	1	13	Open Court	45.54		1.45	1.48	6.622
		12	Macmillan	48.25		1.125	1.09	
II	2,3,4	23	Open Court	2.00	0.60	2.60	2.72	2.31 NS
		22	Macmillan	2.26	0.70	2.96	2.84	

Formula for Level I Adjustments: $\bar{X}'j = (46.84 - \bar{Y}j) + \bar{X}j$

Formula for Level II Adjustments: $\bar{X}'j = (2.13 - \bar{Y}j) + \bar{X}j$

significantly higher achievement in reading than the students in the Macmillan Program.

There was no significant difference between students in the two groups. The Level I Open Court class had a pre-test mean of 45.55 while the Macmillan class had a pre-test mean of 48.25. The Open Court Level I class had a post-test mean grade level equivalent of 1.45 on the SRA Reading Achievement Series as compared to a 1.125 for the Macmillan class. The means adjusted for initial differences were 1.48 for Open Court and 1.09 for Macmillan. This difference was significant beyond the 0.05 level after the analysis of covariance was performed.

The comparison of the Level II classes indicated that the Macmillan group had a higher grade level equivalent at the beginning of the year and a higher post-test mean grade level equivalent. However, the mean adjusted for initial difference by the formula indicated that the true difference was only 1 month. In actual gains the Macmillan group gained 7 months in the 8 month period while the Open Court group gained only 6 months. The adjusted gains however, indicate that had the groups been equal the Open Court classes would have gained 7.2 months and the Macmillan only 5.8 months.

D. The objectives of the project were met only in the first grade level. The major reason for the failure to have a significant difference in Level II was because the students were not introduced to the Open Court program in early grades. Therefore the materials involved a completely different approach from

the approach they had used in earlier grades. The objective was not met but the results do provide valuable evidence that the Open Court program should not be introduced into all grades at one time. The program should be introduced sequentially beginning with the first grade the first year and the second grade the second year. This would insure greater success.

Another factor which may have entered the design was the small number of teachers involved which could have caused the teacher variable to be relatively uncontrolled.

Warren Pilot Project
An Exemplary Approach to Learning Activities in Science for Fifth and Sixth Grade Students

First Year.

1. Objectives:

Objective A: Students in fifth and sixth grade experimental classes will show greater achievement gains in science than fifth and sixth grade students in the control groups as measured by Metropolitan Science Achievement Tests administered by the classroom teachers.

Objective B: Students in the fifth and sixth grade experimental classes will experience fewer failures in science than fifth and sixth grade students in the control groups as indicated by the teachers' records which show passing and failing on the basis of school criteria.

2. Activities:

Teachers received ten hours of pre-school in-service training by the Science Consultant from the University of

Arkansas at Monticello. During the year the science consultant conducted weekly two hour in-service training sessions for the experimental teachers. The laboratory was equiped with all recommended materials and supplies. Students were taught using the materials and equipment.

3. Data:

Students were tested in January, 1971, by the SAESC staff using the Metropolitan Science Tests, form Bm, intermediate level. A significant difference resulted, at the .05 level of significance, between mean scores of only sections 6-1 and 6-3. The experimental class progressed an average of 6 months, and the control class made no progress with this particular test used as a criterion.

The experimental classes progressed an average of 5.50 months and the control class progressed an average of 4.25 months. The average expected growth at testing time was about 4.5 months since these students had been in school about 4.5 months. The data is presented in Table 16.

The high achievers grew on the average about 4.8 months per class and the low achievers grew on the average about 5.0 months per class. The high experimental classes advanced on the average about 6 months per class and high control classes advanced on the average about 5.0 months per class and the low control classes advanced on the average about 5.0 months per class.

Students were tested in May, 1971, by the SAESC staff using the Metropolitan Science Tests, form Cm, intermediate level. No

TABLE 16. WARREN ELEMENTARY SCHOOL SCIENCE PROJECT STATISTICAL SUMMARY - METROPOLITAN SCIENCE TEST.

Teacher	N	Section	Level	Grade	G. E. Sept. $\bar{X}$	Pre-test t-value	G. E. May $\bar{X}$	Post-test t-value
A	27	5-5	E.H.	5	4.8	1.30	6.2	1.47
C	28	5-1	C.H.	5	5.2		6.4	
A	25	5-4	E.L	5	3.6	1.82	4.6	1.59
D	22	5-2	C.L	5	3.9		5.0	
B	25	6-1	E.H.	6	6.3	0.70	7.0	0.21
E	22	6-3	C.H.	6	6.3		6.8	
B	22	6-2	E.L	6	4.7	1.76	5.7	0.13
F	21	6-6	C.L.	6	4.3		5.5	

E.H. - Experimental High; C.H. - Control High
E.L. - Experimental Low; C.L. - Control Low

significant difference resulted, at the .05 level of significance, between mean scores for any experimental class and it's control class.

The experimental classes progressed an average of 1.0 years, and the control classes progressed an average of 1.0 years. The average expected growth at testing time was about 8.0 months since these students had been in school about 8.0 months.

The experimental classes of high achievers progressed on the average of about 1.0 years, and the control classes of high achievers progressed on the average of about 0.85 years. The experimental classes of low achievers progressed about 1.0 years, and the control classes of low achievers progressed about 1.1 years.

Data from the four classes not included in the project were reported as it was necessary to consider results of student achievement from classes where the teacher and students were not referred to as a "control class". These data were meaningful as the pre-test achievement class means of two non-project classes were not significantly different from two experimental classes. There were probably no more differences between teachers in these comparisons than in the comparisons between teachers matched in the design of the project. No systematic grouping procedure was used in assigning students to the four non-project grouping procedure was used in assigning students to the four non-project classes. In some cases, grades assigned by teachers and standardized achievement test

scores were used. Boys and girls were distributed at random to these classes, but students in the experimental and control classes were assigned on a sex basis. As a result, the non-project classes had a sex distribution range of boys to girls from .44 to .63 and the experimental classes had a sex distribution range from .41 to .56.

Section 5-3, a fifth grade non-project class, had 17 boys and 12 girls, a mean pre-test Metropolitan Science score of 4.8, a mean post-test science score of 6.2, and a change between pre- and post-testing of 1.3 years. No significant difference occurred at the .05 level.

Section 5-6, a fifth grade non-project class, had a pre-test class mean science score of 3.1 and a post-test class mean science score of 3.6. Section 5-4, a fifth grade experimental class, had a pre-test class mean score of 3.6 and a post-test class mean of 4.6. The pre-test mean scores were significantly different at the .05 level; therefore, no post-test analysis was performed.

Section 6-5, a sixth grade non-project class, had a pre-test class mean science score of 5.7 and a post-test class mean science score of 6.4. Section 6-1, an experimental class, had a pre-test class mean of 6.3 and a post-test class mean of 7.0. The pre-test mean scores were significantly different at the .05 level; therefore, no post-test analysis was performed.

Section 6-4, a sixth grade non-project class, had a pre-test class mean science score of 4.7 and a post-test score of 5.5.

Section 6-2, an experimental class, had a pre-test class mean science score of 4.7 and a post-test score of 5.7. No significant differences occurred between the two pre-test means or the two post-test means.

One must recognize that several factors may have affected student achievement in science classes in Westside Elementary School. It must be also emphasized that all these factors cannot be controlled in a particular school environment. But, a pilot project provides one with the opportunity for controlling many variables in public education that are not possible to control in the normal educational setting, provided the time is available for studying it longitudinally. Many of these factors should not be controlled. That is, if the project completely isolates students, even if this is possible, then the results of the study would not be meaninful to other classrooms.

However, certain variables that have possibly affected student science achievement need to be discussed. Project teachers knew that they were "experimental" and "control teachers. The "experimental" teachers probably felt that they were under pressure to do a better job than the "control" teachers and vice-versa. They probably worried about how the test results of their students were going to be used. Perhaps a certain abnormality occurred in the "teaching situation" that caused them to subconsciously teach what they considered important to the standardized test. They did not have access to the test, as the tests were given by a SAESC staff member, so, this

dispels the possibility that they taught the test. Concern about standardized test results may have motivated teachers to become better prepared for teaching fifth and sixth grade science.

The standardized tests may have measured at the knowledge level more than at any other level of cognitive ability. As the traditional classroom setting probably encourages more learning of facts than does the inquiry method, the control students may have had an advantage over the experimental students on the standardized tests. The control students studied more science units than did the experimental students, and this added exposure to more materials might have affected the test results.

Laboratory students may have felt that they were singled out as part of an experiment. Warren teachers and administrators were aware of the fact that this could affect student learning, and as far as we know students were not referred to as "experimental" and "control" students. However, the fact that some students used the laboratory and some students did not use it may have caused them to react differently from their normal behavior. That is, the control students may have taken the attitude that "I will show them that I can learn more than students in the laboratory", or the experimental students may have thought, "I don't need to study written materials at all, or I will spend most of my time on science." A few students were moved to different classes after school began so that

proper matching of classes could result as other children moved from Warren and created unequal class-mean science scores. These students may have thought that they were being singled out, and this could have resulted in a behavioral change different from their normal patterns of behavior.

Much of the equipment for the science laboratory arrived too late for adequate planning of its use for the remainder of the year. Also, many science activities that could have utilized the equipment were completed prior to the arrival of the science equipment in November. The equipment, had it been in the laboratory prior to the opening of school, might have motivated teachers and students to work harder. The in-service education could have been more meaningful had the equipment been available to the teachers prior to its use in the early activities. Teachers had a difficult time learning to use the equipment in such a short time, and they were having to prepare students for the "inquiry" or "discovery" method after these students had begun the year in the traditional classroom.

The experimental teachers received in-service training which might have caused teachers to work harder than they had ever worked before in an endeavor to compete with the experimental teachers.

The "Hawthorne Effect" may have caused all personnel concerned to behave differently from their normal behavioral patterns. It has been shown by prior research that short term gains in student achievement can be realized by this effect alone.

Warren Science Project
An Exemplary Elementary Science Program

1. Objectives:

Objective A: Students in fifth and sixth grade experimental classes will show greater achievement gains in science than fifth and sixth grade students in the control groups as measured by the Metropolitan Science Achievement Test administered by the classroom teachers.

Objective B: Students in the fifth and sixth grade experimental classes will experience fewer failures in science than fifth and sixth grade students in the control groups as indicated by the teachers' records which show passing and failing on the basis of school criteria.

Objective C: Students in the fifth and sixth grade experimental classes will exhibit significantly higher attitude scores than students in the fifth and sixth grade control groups as measured by a staff developed attitude scale administered by the SAESC staff.

Objective D: Students in the fifth and sixth grade experimental class will exhibit a greater preference for science than fifth and sixth grade students in the control groups as measured by a staff developed scale.

2. Activities:

The activities for all objectives were the same. They included biweekly in-service training of two hours for the fifth and sixth grade science teachers. This was conducted by Dr. Wayne Divine of the science department of the University of Arkansas at Monticello. In these sessions teachers were familiarized with equipment use and assisted in correlating materials and equipment with the textbook.

The second activity involved the use of the laboratory for science instruction for the experimental groups in the

fifth and sixth grade. The teachers used the laboratory two or three times each week for instruction in science. The teachers used filmstrips, models and equipment that had been correlated with the science textbook. Some laboratory sessions were unstructured in that students could explore new areas, pursue further areas of interest, review filmstrips, discover how rockets or engines worked or read science unitexts on a subject of interest.

3. Data:

The 1971-72 evaluations began with the pre-testing of the fifth and sixth grade science classes on achievement, attitudes and preference for science. Fifth graders' achievement was checked with form Am of the Metropolitan Science Test and sixth graders' with form Bm of the Metropolitan. The attitudes of the students in the experimental and control groups only were pre-tested with a staff developed attitude inventory of 20 items. The students' preference for science was pre-tested with a forced choice instrument developed by the SAESC research and evaluation coordinator.

The pre-test results on the 71-72 sixth grade students were used to make additional analysis of the first year of the project operation. The September, 1971 scores were compared with the May, 1971 scores of these students when they were fifth graders to determine if the experimental groups enjoyed any advantage in subject matter retention over the summer months. The gain scores from September, 1970 to

September, 1971 were also examined to attempt to determine if any significant differences existed. The results of these two analyses are presented in Table 17 and 18. The results seem to clearly indicate that September to September testing will give a truer picture of the actual achievement of the students. May test scores tend to be lower in many cases because of several factors. Students are tired of school in May, the weather is nice and students would like to be outside, and the students have taken so many tests they do not perform as well as they can.

The analyses made with the September scores of the sixth grade students in the second year of operation attempted to answer the following research questions.

1. Did the experimental students retain more of the material they had learned than students in the control groups?

2. Did students of the minority race who were in the experimental classes gain more than those in the control classes?

3. Did low achieving females in the experimental classes gain more than low achieving females in the control classes?

The data presented in Table 17 was tabulated and presented to provide an answer to the first research question. The Chi-Square test of independence of the number of students in the two groups that had no losses from May, 1971 to September, 1971 was significant at the 0.02 level and beyond. A Chi-Square of only 5.41 was required for significance at the 0.02 level. It should be noted that these students were the

TABLE 17. RETENTION OF EXPERIMENTAL AND NON-EXPERIMENTAL FIFTH GRADE SCIENCE CLASSES ON MAY 1971 AND SEPTEMBER 1971 METROPOLITAN SCIENCE ACHIEVEMENT TEST SCORES

Group	Number of Students with Losses	Number of Students with no Loss	Chi-Square
Experimental	12	35	5.80
Non-Experimental	39	44	

TABLE 18. ANALYSIS OF MINORITY RACE ACHIEVEMENT IN EXPERIMENTAL AND NON-EXPERIMENTAL CLASSES

Classes	Mean Gain	t-Value
Experimental	1.0 grade levels	1.29
Non-Experimental	0.57 grade levels	

fifth graders during the first year of the project. The sixth graders during the first year of the project were not pre-tested in the seventh grade, therefore, no scores were available. A Contingency Coefficient of 0.21 was obtained for the Chi-Square value. On a two by two table such as this the maximum possible Contingency Coefficient is .71. This is considered a moderate Contingency Coefficient and would be considered indicative of some practical value for the findings of this analysis. A Contingency Coefficient is a test of the strength of association between the classification and the variable under study. It is comparable to a Multiple R-Square in Multiple Linear Regression which generally is interpreted as the amount of variance accounted for by a variable.

The data for the analysis concerning the second research question is presented in Table 18. The students of the minority race in the experimental group gained a full year from September to September testing while those in the regular classes gained only 5.7 months. The t-value of 1.29 is significant at the 0.09 level. However, the small sample size does not allow any strong generalizations to be made from this data.

The analysis by sex in the low achieving groups on the September to September testing indicated that girls in the low achieving groups who participated in the laboratory made significantly higher gains in achievement than those in the control classes. The data presented in Table 19 indicates

that the differences in the grade level equivalent gains for the two groups was significant at the 0.01 level. The low achieving girls in the experimental classes had a gain in grade level equivalent of 1.06 years while those in the control group had a mean gain of only 0.37 months.

TABLE 19. LOW ACHIEVING GIRLS SEPTEMBER TO SEPTEMBER ACHIEVEMENT GAINS

Group	N	Gain	S^2	Sx-x	t-Value
Experimental	10	1.06	0.46	.275	2.51
Control	15	.37			

The analyses made at the end of the second year of the pilot project attempted to answer the following research questions:

1. Did the students in the fifth and sixth grades in the experimental classes exhibit significantly higher science achievement scores than students in the control classes?

2. Did students in the fifth and sixth grade experimental classes exhibit significantly higher attitude scores at the end of the year than students in the control classes?

3. Did sixth grade students who were in the experimental classes for two years have significantly higher achievement than students who were in the control class for two years?

4. Did seventh grade students who were in the experimental classes as sixth graders have significantly higher gains in the achievement than students who were in the control class as sixth graders?

5. Did students of the minority race who were in the experimental classes exhibit higher attitudes than those in the control classes?

6. Did students in the experimental groups exhibit a significantly greater preference for science than students in the control groups?

The achievement scores for the second year of the project were analyzed with an independent, one-tailed t-test. The groups were initially compared on the science pre-test scores on the basis of the t-test to determine if any analysis of covariance would be necessary. The data presented in Table 20 indicated that there was no significant differences in the groups on the pre-test. Therefore, an analysis of covariance was determined to be unnecessary for an accurate analysis. The data in Table 20 also indicates that there were no significant differences in the experimental and control groups on the post-test. The gain scores indicate that in the fifth grade the control classes had a higher grade equivalent gain than the experimental group in both comparisons. In the sixth grade the low control group out-gained the low experimental group by 2 months. However, the high experimental group gained approximately 5 months more than the high control group. None of these differences were statistically significant.

Attitudes. The pre-test results indicated that there were no significant differences in the attitudes of the students in any of the experimental and control classes. In attitude testing the pre-test scores of the students can generally be expected to be higher than the attitude scores

TABLE 20. ANALYSES OF SCIENCE ACHIEVEMENT SCORES FOR THE WARREN SCIENCE PROJECT - 1971-72.

Grade Group	N	Pre-Test	Post-Test	Change	t-Value
5th Grade					
Control Low	24	3.91	5.01	+1.10	-0.37
Experimental Low	25	4.12	4.92	+0.70	
Control High	26	5.00	6.74	+1.74	-0.78
Experimental High	26	5.40	6.43	+1.03	
6th Grade					
Control Low	21	4.98	5.44	+0.46	-1.11
Experimental Low	21	4.78	5.00	+0.22	
Control High	27	6.56	7.39	+0.83	+1.16
Experimental High	27	6.56	7.82	+1.26	

obtained in a May post-testing situation. This is due to the fact that students are tired near the close of school and are anticipating summer vacation. In three of the four experimental classes there was little drop in attitude and in fact two classes in the fifth grade had gains in attitudes. The comparisons are presented in Table 21.

The comparison of the experimental group and control groups of the fifth grade indicated that the low experimental group had a mean gain of 0.10 points on the 20-point attitude scale while the control group had a loss of 1.70 points. The experimental low group had a post-test mean of 18.40 while

the control group had a post-test mean of 16.30. When these means were compared by means of an independent t-test a t of 2.78 was obtained which indicated that the attitudes of the experimental group were indeed significantly higher at the 0.01 level and beyond. This is even more significant when one considers that the control group's pre-test mean was 0.70 points higher initially.

TABLE 21. ANALYSES OF ATTITUDE SCORES OF FIFTH AND SIXTH GRADE SCIENCE STUDENTS - 1971-72.

Group	Pre-Test	t-Value	Post-Test	t-Value	Change
5th Grade					
Control Low	19.00	Ns	16.30	2.78**	-1.70
Experimental Low	18.30		18.40		+0.10
Control High	16.50	Ns	16.08	1.93**	-0.42
Experimental High	16.76		18.27		+1.51
6th Grade					
Control Low	16.50	Ns	10.96	0.57	-5.54
Experimental Low	15.90		11.59		-4.31
Control High	16.41	Ns	15.78	1.64*	-0.63
Experimental High	17.22		16.96		-0.26

* Significant at the 0.05 level

** Significant at the 0.01 level

When the attitude scores of the high experimental and control groups were compared, it was determined that the experimental group had a mean gain of 1.51 on attitude scores while the control group had a loss of 0.42. The post-test mean for the experimental group was 18.27 as compared to a mean of 16.08 for the control group. This difference in post-test means was significant at the 0.01 level when compared with an independent t-test.

The comparison of the attitude scores of the low experimental and low control groups in the sixth grade indicates again as previously stated that some unknown factor had affected both the low groups of the sixth grade. It appears obvious that something had occurred prior to the testing time or during the testing period that adversely affected these scores and thus they do not present a representative picture of their achievement or attitudes. These two groups had a drastic drop in attitudes and many had a drastic drop in grade level on the achievement test. The analysis indicated that there was no significant difference in the post-test means. However, it should be noted that the drop in attitudes for the control group was 1.23 points more than the drop in attitudes of the experimental group which would be significant.

The comparison of the attitudes of the high sixth grade groups indicated that the experimental post-test mean of 16.96 was significantly higher than the control mean of 15.78 at the 0.05 level.

In order to determine the effects of the laboratory approach on the attitudes of the students of the minority race, the attitudes of these students in the experimental classes was compared to the attitudes of the students in the control classes. These comparisons are presented in Table 22.

TABLE 22. ANALYSIS OF ATTITUDE SCORE OF MINORITY RACE STUDENTS IN THE FIFTH AND SIXTH GRADE.

Group	Pre-Test Mean	t-Value	Post-Test Mean	t-Value	Mean Change
5th Grade					
Control	18.46	Ns	15.36	3.31*	-3.10
Experimental	18.50		18.80		+0.30
6th Grade					
Control	17.08	Ns	11.87	Ns	-5.21
Experimental	15.67		10.64		-5.03

* Significant at the 0.005 level for a one-tailed t-test.

The comparison of the minority students in the fifth grade experimental classes with fifth grade students in the control classes showed that the two groups attitudes were initially the same but at the end of the year the mean for the minority race students in the experimental classes was 18.80 and for those in the control classes the means was 15.36. The independent t-value obtained was 3.31 which is

significant at the 0.005 level. This indicates that the laboratory approach did in fact result in significantly higher attitudes for the students of the minority race in the fifth grade. The students in the control group had a mean attitude loss of 3.10 points while those in the experimental group had a mean gain of 0.30 points.

Comparison of the minority race students in the sixth grade indicated that there was no significant differences. Although, initially, the control groups attitude was higher the control group lost 0.18 points more than the experimental group. The sixth grade attitude scores are again affected by the unknown phenomenon that affected the low achieving sixth grade group. This is based upon the fact that the majority of these students were in the low achieving classes.

The data appears to answer the research question in the affirmative. Some comparisons did not support this conclusion but these comparisons are questionable because of the unknown factor which seems to have adversely affected the results of the low achieving sixth grade students. In all cases the experimental groups had less loss or even gains as compared to losses than did the control classes. Thus it should be concluded that the laboratory approach is an effective means of improving student attitudes toward school, toward the teacher and toward science.

Preference for Science. In order to determine if the laboratory was effective in increasing students preference

for science, a comparison was made of the science preference scores of the students in the fifth and sixth grade on a staff developed instrument. Initial comparisons of the pre-test means for all groups indicated no significant differences existed. In all experimental groups in both the fifth and sixth grade the mean post-test scores were higher than the pre-test scores. An independent t-test was calculated on pre-test scores, on post-test scores and on change scores. The comparison of the post-test scores for the fifth grade low experimental and control groups indicated no significant difference but a t-value of 2.38 was obtained when the change scores were analyzed. This indicated that the experimental group had a higher gain that was significant at the 0.05 level. Table 23 contains this data.

Comparison of the post-test means for the fifth grade high experimental and control groups indicated no significant difference. The comparison of the mean net change for the two groups indicated that the experimental group had a mean gain that was significantly higher at the 0.10 level.

A comparison of the low sixth grade experimental and control groups on post-test means indicated that the experimental mean was significantly higher at the 0.005 level. When the change scores were compared the experimental groups gain of 0.41 points was higher than the control group's loss of 1.11 points at the 0.001 level of significance.

TABLE 23. ANALYSIS OF SCIENCE PREFERENCE SCORES OF FIFTH AND SIXTH GRADERS - 1971-72.

Group	Pre-Test	t-Value	Post-Test	t-Value	Change	t-Value
5th Grade						
Control Low	5.63	Ns	4.90	1.23	-0.73	2.38**
Experimental Low	5.11		5.33		+0.22	
Control High	5.00	Ns	5.12	0.57	+0.12	1.51*
Experimental High	4.80		5.48		+0.68	
6th Grade						
Control Low	4.88	Ns	3.77	2.98***	-1.11	3.23****
Experimental Low	4.70		5.11		+0.41	
Control High	5.25	Ns	3.55	4.49****	-1.70	5.16****
Experimental High	5.00		5.57		+0.57	

* Significant at the 0.10 level
** Significant at the 0.05 level
*** Significant at the 0.005 level
**** Significant at the 0.001 level

The experimental high group's post-test mean of 5.57 was significantly higher than the control group's mean of 3.55 at the 0.001 level of significance. The experimental high group had a mean gain of 0.57 points as compared to a mean gain of -1.70 for the control group. This difference was significant at the 0.001 level in favor of the experimental group.

From this data it must be concluded that the laboratory will increase the students preference for science and will increase the number of students who indicate science as

their favorite subject in school. The levels of significance reached are extremely high for educational research indicating that the laboratory was extremely effective in this area.

Two-Year Achievement Gains. To determine the effects of two years in the program, the students who were in the laboratory during the fifth and sixth grade were compared with an equal number of students who did not use the laboratory during either year. Because of attrition and various factors only thirteen students could be identified that had been in the experimental groups during both years. These students represent a combination of high and low achievers. This analysis indicated that there was no significant difference in the control and experimental groups. However, those students in the experimental groups gained 1.84 grade levels from September, 1970 to May, 1972 as compared to a gain of 1.73 grade levels for the control group. This difference was not statistically significant. No sound conclusion can be made from this analysis because of the small sample size. Table 24 contains the data for this analysis.

Seventh Grade Follow-Up. The 1970-71 sixth graders were post-tested in May, 1972 as sixth graders to determine if the experimental groups benefited significantly over a longer period of time from the program. Table 25 contains the comparisons of the experimental and control groups as seventh graders. The analyses for both the high and low

TABLE 24. ANALYSIS OF THE TWO-YEAR SCIENCE ACHIEVEMENT OF THE 1972 SIXTH GRADE STUDENTS

Group	Mean Grade Equivalent September, 1970	t-Value	Mean Grade Equivalent May, 1971	t-Value	Mean Grade Equivalent May, 1972	t-Value
Experimental	4.13	-0.72	5.13	-0.05	5.97	-0.53
Control	4.54		5.16		6.27	

	CHANGE		
	1970-71	1971-72	1970-72
Experimental	1.00	0.84	1.84
Control	0.62	1.11	1.73

TABLE 25. A FOLLOW-UP ANALYSIS OF SEVENTH GRADE ACHIEVEMENT IN SCIENCE

Group	Grade Equivalents			Gain Scores			
	September, 1970	May 1972	t-Value	1971-72	t-Value	1970-72	t-Value
Control Low	4.30	5.87	NS	0.65	NS	1.14	NS
Experimental Low	4.67	5.80		0.43		1.38	
Control High	6.71	8.30	NS	1.13	NS	1.54	1.77*
Experimental High	6.26	8.40		1.30		2.14	

* Significant beyond the 0.05 level.

group comparisons indicated no significant differences in the May, 1972 mean test scores. There was also no significant differences in the achievement gains made during the seventh grade. Although the experimental high group gained approximately two months more than the students who had been in the control class as sixth graders. There was no significant difference in the two year gains of the low experimental and control groups. The experimental low group did gain 2.4 months more than the control low group during the two years. The two year gain of 2.14 years for the students who were in the experimental group as sixth graders was significantly higher than the two-year gain of 1.54 years for the control group. It would appear from the data that there is some trend for the students who have been exposed to the laboratory to do slightly better in junior high science.

4. Comments:

When comparing these scores one has to be aware of several conditions that have distorted the results. One of the factors that apparently affected the results in the sixth grade is the fact that testing error apparently operated very significantly in the low experimental class because so many of the students had a much lower May grade equivalent than they had in September. It is the opinion of the researcher that for some reason the test data was not a good one for this group. Some unknown factor or

disruption affected the scores of these students.

A second factor, which has to be a major factor in the outcome of this project, was the use of the Metropolitan Science Achievement Test which is not oriented to the laboratory approach to science teaching. This test is seriously biased to the textbook based methodology. Thus, the selection of a test more appropriate to the project objectives could conceivably produce quite different results.

A major factor in contaminating the results of the study was the "John Henry" effect. This merely means that the students in the control classes felt that they were in competition with the experimental classes and therefore, their achievement was considerably higher than was to be expected from their past performance. The graphs in Figure 1 indicates the

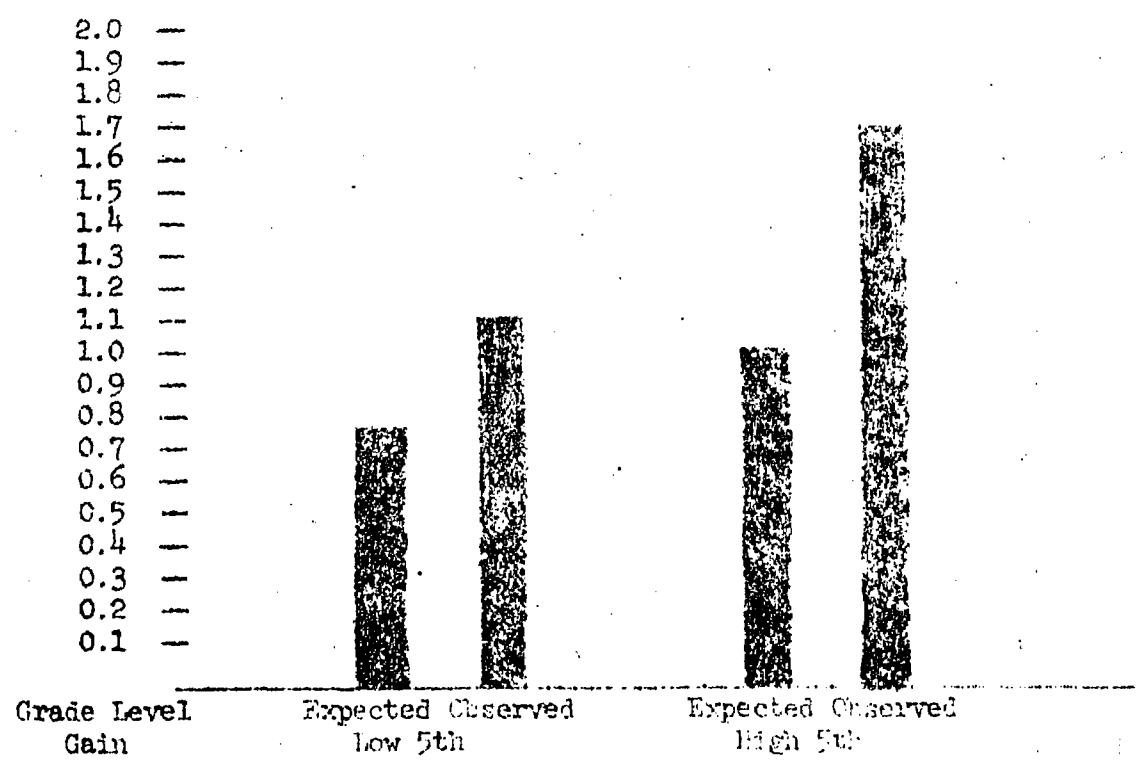


FIGURE 1. EFFECTS OF COMPETITION ON THE ACHIEVEMENT GAINS OF THE FIFTH GRADE CONTROL CLASSES

achievement that would be predicted for each of the control groups on the basis of their previous performance and the actual performance of that control group.

The data in Figure 1 clearly indicates that the achievement of the fifth grade students in the control classes was much higher than would be expected from the students previous performance. The low control class gained 4 months more than they had gained in any previous year and the high control class gained 7.4 months more than they had gained in any previous year. This did not occur in the sixth grade control classes. The gains in the sixth grade classes were approximately the same as the predicted gain.

Another major factor affecting the results was the fact that the in-service training the teachers received carried over to the control classes. The teachers conducted more experiments using simple materials than are generally done in elementary science classes. This carry over undoubtedly improved the instruction considerably. In addition the teachers made extra efforts to do things for the control class because of the students' disappointment at not being allowed to use the laboratory.

The sixth grade scores were affected severely by the fact that the sixth grade teacher resigned at semester and was replaced by another teacher. During the first semester the sixth grade students were taught by a substitute over four weeks because of the absence of the regular teacher.

Thus the experimental classes missed several weeks of laboratory instruction during the absence of the teacher. It should be noted that both teachers did an excellent job and that the time that they were there the students received excellent instruction. However, any change of teachers in the middle of the year and having a substitute for a long period necessarily affects the experimental group adversely.

Lake Village
An Exemplary In-Service Program

First Year.

1. Objectives: & 2. Activities:

Objective A: Teachers and administrators will learn to develop and write behavioral objectives through instruction based on the EPIC model for evaluation as measured by pre- and post-tests constructed by and administered by EPIC consultants.

Instruction was concentrated in a three day pre-school workshop for a total of eighteen hours of in-service training. Dr. Richard Powell, an EPIC Center staff member, conducted the workshop. Participants studied how to write behavioral objectives and how to plan for future class activities based on the behavioral objectives. Each participant was given time to plan his first week's objectives for social studies, language arts, or business education. Each set of objectives were critiqued by Dr. Powell, the Lake Village Secondary Supervisor, the Lake Village

Elementary Supervisor, or the SAESC Research and Evaluation Specialist. Thirty-two teachers and administrators participated in the pre-school workshop.

Objective B: Students enrolled in English (grades 4-9), will increase learning at least one grade level, or an equivalency commensurate with the interim between pre- and post-testing, after receiving instruction based on behaviorally stated objectives. For reporting purposes, the SRA Achievement Test will be used to measure the increase in learning

Objective C: Students enrolled in Social Studies (grades 4-9), will increase learning at least one grade level, or an equivalency commensurate with the interim between pre- and post-testing, after receiving instruction based on behaviorally stated objectives. For reporting purposes, the SRA Achievement Tests will be used to measure the increase in learning.

Objective D: Students enrolled in English (grades 10-12) will increase their learning at least one grade level or an equivalency commensurate with the interim between pre- and post-testing, after receiving instruction based on behaviorally stated objectives. For reporting purposes, the ITED will be used to measure learning.

Objective E: Students enrolled in Social Studies, (grades 10-12), will increase their learning at least one grade level or an equivalency commensurate with the interim between pre- and post-testing, after receiving instruction based on behaviorally stated objectives. For reporting purposes, the ITED (Iowa Tests of Educational Development) will be used to measure learning.

Objective F: Students enrolled in Business Education classes (grade 10-12), will increase learning sufficiently, after receiving instruction based on behaviorally stated objectives, to make passing grades. Teacher constructed tests relating to the behaviorally stated objectives will be used as a measuring instrument. Passing and failing will be based on established school criteria.

A two hour in-service workshop was conducted each month by the SAESC Research & Evaluation Specialist. Teachers wrote behavioral objectives, measured student achievement specified in the objectives and used the results in writing new objectives.

Individual teachers were visited in their classrooms by the SAESC staff. These visits allowed the staff member to monitor the teachers activities and to determine to what extent the written objectives were being carried out in the classroom.

3. Data:

Students enrolled in Language Arts in grades 4, 5, 6, 7, 8 and 9 did not increase learning at least one grade level or an equivalency commensurate with the interim between pre- and post-testing as measured by SRA tests. The interim between pre- and post-testing was seven months. Fourth graders made an average gain of four months, fifth graders gained two months, sixth graders gained three months, seventh graders made no gain, eighth graders made no gain, and ninth graders made no gain.

Students enrolled in Social Studies (grades 4-9) did not increase learning at least one grade level or an equivalency commensurate with the interim between pre- and post-testing, after receiving instruction based on behaviorally stated objectives as measured by SRA tests. The interim between pre- and post-testing was seven months.

Fourth graders made an average increase of one year and three months, fifth graders made no gain, sixth graders gained one month, seventh graders gained three months, eighth graders gained two months, and ninth graders made no gain.

Students enrolled in English (grades 10-12) did increase their learning at least one grade level between pre- and post-testing as measured by the ITED Total Language Arts Subtest. The pre-test score was 9.3, and the post-test score was 10.3. The interim between pre- and post-testing was seven months.

Students enrolled in Social Studies (grades 10-12) did increase their learning at least one grade level between pre- and post-testing as measured by the ITED Social Studies Subtest. The interim between pre- and post-testing was seven months. The pre-test score was 9.3, and the post-test score was 10.3

These data are presented in Table 26.

As a result of the in-service activities in behavioral objective writing, Lake Village Business Education teachers changed the amount of time spent on specific topics or units of study in their classes. They were unaware of the fact that their students were not increasing their time writing speed each six weeks until an evaluation chart was developed by the Lake Village teachers. The chart aided the teachers in evaluating their teaching

TABLE 26. LAKE VILLAGE TEST RESULTS (GRADES 4-12)

Grade Level*	Social Studies		Language Arts	
	Pre-Test G.E. $\bar{X}$	Post-Test G.E. $\bar{X}$	Pre-Test G.E. $\bar{X}$	Post-Test G.E. $\bar{X}$
4	3-1 (N=46)	4-4 (N=46)	3-5 (N=46)	3-9 (N=46)
5	4-8 (N=80)	4-8 (N=80)	4-2 (N=80)	4-4 (N=80)
6	5-0 (N=118)	5-1 (N=118)	4-6 (N=118)	4-9 (N=118)
7	4-1 (N=25)	4-4 (N=25)	4-1 (N=25)	4-1 (N=25)
8	5-8 (N=92)	6-1 (N-92)	5-9 (N=93)	5-9 (N=93)
9	8-5 (N=50)	8-1 (N=50)	8-4 (N=59)	7-7 (N=59)
10-12	9-3 (N=298)	10-3 (N=298)	9-3 (N=299)	10-3 (N=299)

* Grades 4-9 (SRA Multilevel tests)
Grades 10-12 (ITED tests)

and student achievement. Ninety-five percent of the students passed Typing I.

The evaluation chart developed by the Lake Village Business Education teachers is presented on the next two pages.

LAKE VILLAGE
EVALUATION CHART - TYPING I

First 6 Weeks

	Yes	No	Comments
3' writing 20 wpm	12	32	
Comp. Tab Skills-70%	38	16	
Resp. Pos. to Instruct.	--	--	
Disp. Know of proof: Skills	28	16	
Self-discipline	--	--	

Second 6 Weeks

	Yes	No	
30 wpm. 3' T.W.	13	31	
Horiz. & Vert. Cent. 70%	29	15	
Comp. Skills	--	--	
Personal-use Typing	13	31	
Proofreading Skills	--	--	

Third 6 Weeks

	Yes	No	
30 nwpm 5' T.W.	7	34	
Know of op. parts 70%	23	21	
Carbon Pack. 70%	28	16	

Fourth 6 Weeks

	Yes	No	
35 nwpm -5' T. W.	0	38	
Word Div. & Cap.			
Realignment Skills			
Centering Skills 70%	31	3	
Bus. Letter 70%			

Fifth 6 Weeks

	Yes	No	Comments
40 nwpm-5'	2	126	
Comprehension Tab. Skills 70%	95	33	
Tab "squeezing" & Tab "spreading" 70%	80	48	
Comp. Bus. Letter	96	32	
Comp. Msc w/Rib. & Title page 70%	95	33	

One Year

	Yes	No	
Posture, Procedure	113	15	
Follow Instructions 70%	113	15	
Timed Letter writing skill 70%	90	38	
Add. & Letter-folding 70%	96	32	
Tabulating Skills 70%	87	41	
Comprehension of all parts of type	108	20	
Timed Letter Comp. 70%	105	23	
Proof. & Mss. (timed) 70%	104	24	
Grammar Skills 70%	73	55	
50 nwpm-5'	3	125	

Data presented for the first four six-weeks are incomplete.

4. Comments:

The Lake Village elementary teachers were more conscientious in their endeavors, and they seemed to be more interested in the welfare of the student than were the high school teachers in the project. The elementary teachers attended more SAESC in-service meetings than the high school teachers and generally seemed to be better teachers. Yet, the test results indicate that the high school students increased more in average test score units between pre- and post-testing than did the elementary students.

There are at least two possible reasons for these results. One might be that the elementary teachers taught their objectives that were not geared to the knowledge-level tests that were used to measure student achievement. Another might be that the high school teachers were more pre-occupied with the traditional recall type items, and the emphasis on recall of items helped the high school students increase their score tremendously. The high school teachers were not really committed to the sketchy objectives they had written, and they were free to concentrate on the textbook facts as the only important objectives in their classrooms.

The Lake Village Pilot Project did not have a control group, and this made evaluation of the project very difficult. Many variables affect the results of any public school research, and the absence of a control group in a

project limits the comments that can be made about the possible effects of the treatment. In this case, it was theorized that a definite causal relationship existed between increased teacher planning and student achievement. This theory has not been quelled. We do not know if the behavioral objective writing, or the time spent planning class activities by the teachers, increased student achievement. We believe that Lake Village students benefited from the project; but, we do not believe the standardized tests adequately measured the achievement of the students, especially the students in grades 4-9.

The Lake Village Pilot Project began with thirty-two teachers and administrators in the pre-school workshop. It was hoped that all teachers and administrators would join the project in its second year of operation. However, participation in the in-service activities has dwindled. The Lake Village Elementary Supervisor has accepted a teaching position with Atlantic University. The Secondary Supervisor is returning to graduate school to complete his doctorate. Only ten teachers that were in this year's project will be working in the Lake Village School System next year.

Second Year - 1971-72

Project was Discontinued.

II. General

A. Major

1. Schools - As a result of the services aspect of the Region IX Title III project schools are sharing expertise of their teachers who have been involved in the Title III activities to activate new programs. As a result of in-service training and workshops several schools have individualized instruction especially in mathematics. Monticello, Thornton, Rison, Crossett and Dumas are among the schools that have individualized some or all of their instruction. As a result of the special education coordinators assistance in testing and in setting up classes there has been an increase in the number of special education classes.

As a result of the Crossett First Grade Reading Project, the Crossett School System entered into a non-graded primary program this year and the decision has been made to extend the Open Court Program to all first grade classes and to all second grade classes.

As a result of the Crossett Special Education Work Center Crossett has decided to devote a larger area to the program.

As a result of the Warren Science Project the laboratory facilities will be opened to include all fifth and sixth grade classes.

2. Students - As a result of the testing services many

children have been properly placed in special education classes so that they may receive the special assistance they need.

As a result of the Crossett Reading Project first graders were achieving above grade level. Students attitudes were significantly better and the writing skills of the students were significantly increased by the Open Court Program.

As a result of the Crossett Special Education Work Center the attitude of the children in the elementary schools toward the special education students has been one of more tolerance, understanding and acceptance.

As a result of the Parkdale Reading Project first grade achievement increased by approximately three months.

As a result of the Warren Science Project students' attitudes were significantly higher. Achievement of all groups was higher. Students retained more of the science materials they had learned. A greater number of students expressed a preference for science.

3. Staff - As a result of workshops and in-service training teachers have a better understanding of how to implement an individualized instruction program. The teachers who participated in the reading projects have a greater skill in reading instruction especially in the area of improving reading comprehension. Special education teachers have improved skill in setting up special education classes.

Teachers have a better understanding of learning disabilities as differentiated from mental retardation.

The Warren science teachers have a greater expertise in using science equipment and in performing experiments. They have the confidence that they are able to teach science effectively.

4. Community - The projects have received much publicity in local papers, thus procuring community interest and understanding.

B. Spin-Off

As a result of the Crossett & Parkdale Programs Dumas Elementary School added an Open Court class to their first grade curriculum. Warren School District adopted the Open Court Reading Program for their special education classes.

Monticello plans to use the Open Court program in at least three classes in 1972-73. Dumas plans to expand their program to other first grade classes and to one second grade class.

Monticello fifth grade and sixth grade teachers have individualized their mathematics program. A few teachers in Warren individualized their math programs.

C. The Warren Science Project could have been as effective without some of the more expensive equipment.

The Parkdale Project would have been more effective if reading specialists had been employed to teach reading.

The Crossett Special Education Work Center needed additional space.

D. All pilot projects are being continued and expanded in most cases. Crossett is expanding the Reading Program to include the second grade and has doubled the space for the Work Center.

Several schools have adopted the Open Court Reading Program.

E. The continuation is being supported from local funds.

G. None.

H. The Crossett project and the Parkdale Reading project were based on the need for improving the reading achievement of elementary students. The Parkdale Project was directed toward the Reading achievement of black students. The data presented in Section IA of the narrative indicates that all experimental classes in Crossett were achieving above grade level in reading. The Open Court first graders were tested at a grade level of 1.8 and were found to be achieving at a 2.36 level in total reading or approximately 5.6 months above grade level. (See Tables 5 & 6). The Crossett First Graders exhibited significantly higher attitudes and writing skills than comparable control groups (See Table 7). In addition, the Crossett non-graded program was found to be much

more effective than ability grouping (See Table 8 of Section I).

The Parkdale Students in the first grade experimental class achieved approximately 3 months more than the corresponding control group (See Table 15).

The Crossett Special Education Work Center was based on the needs of the Educable Mentally Retarded. Results of their project are presented in Tables 9-13 of Section IA.

The Warren Science Project was directed toward the need for improving science achievement in the elementary school and the need for improving students attitudes and interests i n science. The project was very successful in improving the attitudes of the students (See Table 21) especially with the attitude of black students (See Table 22). Science achievement of all groups was higher (See Figure I and explanation).

I. Not Applicable.

III. Evaluation Instruments

Crossett No. 1

A. Harrison Stroud Reading Readiness Test
California Reading Achievement Test

B. The Crossett First Grade Attitude Inventory (Appendix A) was used to measure students attitudes toward reading, their teacher and toward school. The

instrument was considered adequate in measuring these areas.

C. Additional analyses of attitudes and writing skills were made as a result of the teaching staff and the SAESC staff conference on the project evaluation. Teachers believed these areas were being neglected and that they were in fact the inherent advantages of the correlated language arts program. This change was made in November.

As a result of the first year analyses the Crossett School System went into a non-graded primary program. Thus eliminating the comparison of grouping heterogeneously and homogeneously.

Crossett No. 2

A. Wide Range Achievement Test

B. Behavioral Checklists (Appendix B) were used to determine individual needs in various skill areas (see appendix). Forms were developed for primary, intermediate and junior high school levels.

Checklists were considered very effective by special education teachers.

C. None

Parkdale

A. Harrison Stroud Reading Readiness Profile
SRA Reading Achievement Test

B. None

C. Analysis of covariance was used because initial matching left differences that were too large for true analysis by t-test.

Warren

A. Metropolitan Science Achievement Test - Intermediate Form Am, Bm, Cm, Advanced Form Am (7th grade)

B. Attitude Inventory (Appendix C)
Science Preference Scale (Appendix D)

The Attitude Inventory appeared to adequately measure students changes in attitude toward science, their science teacher and toward school.

The science preference scale indicated the students favorite course and gave a frequency count of the number of times science was a choice. The scale was considered effective in meeting this purpose.

C. Attitudes were not included in the original objectives nor was science preference. During the summer of 1971 the decision was made to include these evaluations due to the teacher's statements that they felt the attitudes were significantly better.

Additional analyses were made of retention over the summer months and of black students achievement and attitudes. These analyses were made in an attempt to determine as much as possible from the available data. The decision to do this was made in September after the pre-testing for the year.

Lake Village

A. SRA Achievement Test
Iowa Test of Educational Development

B. None

C. Discontinued

D. See Appendix

E. Each school will continue pre- and post-testing of students. However, it is doubtful that comparisons of groups will continue to be made.

IV. Dissemination

A. Two two basic methods used for dissemination were via a prepared slide presentation and a quarterly newsletter. The slide presentation was composed primarily of the pilot project activities; while the newsletter was an overview of all SAESC Title III activities. The newsletter was the more effective of the two methods in that it reached more people. Personal appearance, by SAESC Title III Staff members, to explain the program

of SAESC were beneficial as a dissemination method, also.

B. See enclosed disseminated materials.

C. The following school districts have adopted new educational practices as a result of receiving information about our project: Dumas, Monticello, Thornton, Fountain Hill, Portland, and Lake Village. These are in addition to the schools where the Pilot Projects were conducted.

All Pilot Project schools are continuing their SAESC Title III initiated programs. The foregoing listed schools have adopted non-graded approaches for the first 3 grades and all except Thornton have adopted the Open Court Reading Program. Crossett has done the most extensive non-grading and both they and Parkdale will expand the use of the Open Court Programs. Crossett has also expanded the Special Education Center, spacewise and in the numbers they serve.

Services, for the eight county (SAESC Title III Area), in the form of consultants, advisors, and program coordinators for activities which Title III has initiated will come from school personnel who have been directly involved in this program as teachers and/or administrators.

Presentations were made annually at the State Title III Convention in Hot Springs. The thrust of

these presentations were to familiarize people with the overall SAESC activities.

V. Miscellaneous - 1970-71

A. Dr. Vernon Glenn, Mr. Leon Thornton, Mr. John Dixon and Dr. Neal Little conducted a one-day faculty workshop on August 20, 1970 concerning sensitivity training for Warren School District.

Dr. Richard Powell conducted a three-day pre-school workshop for 35 Lake Village Personnel on the EPIC Evaluation System on August 23 - 26, 1970.

Dr. Glenn Cochran, Associate Professor of Education, University of Arkansas delivered the keynote address to faculty of the Star City Public Schools during pre-school workshop on August 24, 1970.

Mr. Horrell Jones, Science Consultant from Arkansas A&M, conducted pre-school in-service training for the Warren Elementary science teachers and conducted weekly in-service training sessions of two hours for the Warren experimental science teachers.

Miscellaneous - 1971-72

A. Dr. Larry Roberts, Consultant from Region VIII Educa-Service Center, and Mrs. Nancy Crawford, a teacher from Hot Springs, conducted a pre-school workshop for the Warren faculty on "Individualizing Instruction".

Dr. Joseph May, Assistant Professor from Southwest Louisiana State University, conducted a pre-school workshop at Crossett for the Special Education personnel.

Miss Marilyn Waters, an Open Court Reading Representative, spent five days in Crossett orienting the Crossett and Parkdale Elementary teachers to the Open Court procedures. If any one person did something to affect the overall outcome of the Crossett and Parkdale projects it was probably Miss Waters. Unfortunately the Macmillan Representative began her work late in the year and was not as well prepared and enthusiastic as Miss Waters.

Dr. Wayne Divine, Instructor from the Science

Department at UAM, served as Consultant twice per week during the entire year to the Warren Science teachers.

Miss Jean Lukens, Educational Director from the Child Study Center in Little Rock and Dr. Edward Frierson, Executive Director of the Nashville Learning Center, conducted an all-day workshop for all school personnel. The theme was "Helping Children with Learning Disabilities." This workshop was held late in the year consequently, its effects will not be known for years to come. However, responses from those attending indicate it may have been one of the most fruitful endeavors undertaken by SAESC Title III.

Mr. Jim McCormick, Elementary Supervisor from Crossett, assisted in the presentation of the Crossett non-graded reading program to State Title III Convention in Hot Springs.

B. The only definite commitments to continuation of SAESC Title III activities are that all pilot projects are going to be continued and even expanded. A cooperative sharing of personnel from within the individual districts is one means which will be used to continue project activities.

C. Included in materials are the following booklets:

"Keys To Successful Reading"
"Guide for Classes in Special Education"
"A Collection of Choral Readings"
"Parents and the Reading Program"

VI. The only change in staffing during the 1971-72 year was the replacement of the Instructional Secretary, Mrs. Kathleen Rash. She took a new assignment in May and Mrs. Pat McClain was hired in this position for the duration of the project.

Prior to the start of the 1971-72 school year Dr. Joe May, the Research & Evaluation Specialist and Dr. Curtis Merrell, the Project Director, resigned. Dr. Stanley Williams was hired as the Research & Evaluation Specialist and Dr. George Parker was hired as the Project Director for the 1971-72 year.

_____ School District

NOTE: ALL ITEMS PURCHASED WITH ESEA TITLE III FUNDS COSTING $50.00 OR MORE PER UNIT MUST BE LISTED; OTHER ITEMS MAY BE LISTED.

IDENTIFICATION NO.	DESCRIPTION	UNIT COST	DATE OF ACQUISITION	ASSIGNED TO	DATE OF ASSIGNMENT	TRANSFERRED TO	DATE OF TRANSFER	DATE AND MANNER OF FINAL DISPOSAL
	Investimodels TBS6	$125.00	8/70	Warren	8/70			7/72 Warren
	Investimodels TBS6	125.00	"	"	"			" "
	Investivision Trans. Set TBS5	108.75	"	"	"			" "
	" " " TBS6	108.75	"	"	"			" "
3509	Microprojector Model X1000	295.00	"	"	"			" "
L6	Optical Bench	84.50	9/70	"	9/70			" "
L7	Photometer Panel	98.00	"	"	"			" "
E6	Source & Effects Panel	186.00	"	"	"			" "
L7	Electromagnetism Panel	139.00	"	"	"			" "
P2	Bouyancy Panel	74.50	"	"	"			" "
H-S	Source of Heat	162.00	"	"	"			" "
P-5	Jolly Balance	81.00	"	"	"			" "
C-2	Gas Measurement Panel	71.00	"	"	"			" "
C-?	Electrolysis Panel	105.00	"	"	"			" "
G-1	Osmosis Panel	67.50	"	"	"			" "
G-5	Weather Instrument	128.50	"	"	"			" "
H-1	Heat & Expansion Panel	78.00	"	"	"			" "
F-10	Force & Motion Panel	74.00	"	"	"			" "
F-1	Inclined Plane	78.00	"	"	"			" "
W-29800	Chalkscreen Projector Center	722.00	"	"	"			" "
R-22800	Apparatus Panel Cabinet	325.00	"	"	"			" "
R-22750	Vertical Apparatus Panel Cabinet	375.00	"	"	"			" "
"	" " " "	375.00	"	"	"			" "
	Graflex 5m1000 Remote Filmstrip Proj.	155.00	"	"	"			" "
	Buhl OH Projector 80/10	110.00	"	"	"			" "
CR 2441	Plant Mobile	250.00	12/70	"	12/70			" "
(4)	Peabody Lang. Dev. Kits (Primary)	145.00	8/70	Crossett	8/70			" Crossett
(4)	Peabody Lang. Dev. Kits (Level 1)	52.00	"	"	"			" "
(4)	Peabody Lang. Dev. Kits (Level 2)	65.00	"	"	"			" "
(2)	Parkinson Work Box	56.16	"	"	"			" "
(6)	Open Court Workshop Kits	98.62	"	"	"			" "
(5)	Acousti Center	58.60	"	"	"			" "
(3)	7 piece Dinette Sets	55.00	"	"	"			" "

INVENTORY - TITLE III, ESEA

School District

NOTE: ALL ITEMS PURCHASED WITH ESEA TITLE III FUNDS COSTING $50.00 OR MORE PER UNIT MUST BE LISTED. OTHER ITEMS MAY BE LISTED.

IDENTIFICATION NO.	DESCRIPTION	UNIT COST	DATE OF ACQUISITION	ASSIGNED TO	DATE OF ASSIGNMENT	TRANSFERRED TO	DATE OF TRANSFER	DATE AND MANNER OF FINAL DISPOSAL
(1)	Kodak Carosel Projector	$149.63	8/70	Monticello	8/70			7/72 Monticello
(1)	LCH 100 PH Pulse Recorder	283.25	"	"	"			" "
(1)	35 mm Mamiya Sekor DTL 1000 Camera	182.50	"	"	"			" "
(2)	Sewing Machines	50.00	"	Crossett	"			" Crossett
(1)	# 5053 Folding Mat 6' x 4'	60.00	"	"	"			" "
	Overhead Projector	130.00	8/71	Crossett	8/71			" "
	Filmstrip Projector	155.00	"	"	"			" "
	Tape Recorder & Player	50.00	"	"	"			" "
	Mimeograph Machine (Crossett paid $300 on cost of mimeograph machine)	295.34	"	"	"			" "
	Peabody Lang. Dev. Kit	57.00	"	"	"			" "
6580830	IBM 19 in. typewriter	225.00	"	Monticello	"			" Monticello
	Trans-Seal Laminator	136.76	"	"	"			" "
	Workshop Kit	93.60	"	Crossett	"			" Crossett
	" "		"	"	"			" "
	" "		"	"	"			" "
	" "		"	"	"			" "
	" "		"	"	"			" "
	" "		"	"	"			" "
			"	Dumas	9/10/71			" Dumas
			"	Monticello	8/71			" Monticello
	Student Stereomicroscope	50.00	"	Warren	"			" Warren
	Microscope	163.00	"	Warren	"			" "
	Science Reference Book	225.00	"	Warren	"			" "

PART II - SUMMARY OF AUTHORIZATIONS, EXPENDITURES AND BALANCES OF TITLE III, ESEA FUNDS

Items		Part I - Expenditures	Amount
1. Amount authorized for expenditure for budget period shown above	Cash Received	$ 188,500.00	$ 201,000.00
a. Unexpended funds from grant award for prior budget period	$		
b. Approved grant award for budget period shown above	$		
c. Total funds authorized for budget period (same as Item 1)	$		
2. Expenditures during budget period shown above	Spent	$ 185,989.13	$ 185,989.13
3. Unexpended balance of funds authorized for expenditure during budget period (Items 1 minus 2)	Cash Bal.	$ 2,510.87	$ 15,010.87

PART III - CUMULATIVE TOTALS - GRANT AWARDS AND CASH RECEIVED SINCE INCEPTION OF PROJECT

Grant Awards: $ 201,000.00 Cash Received: $ 188,500.00

PART IV - HANDICAPPED COMPONENT EXPENDITURES (REQUIRED ONLY FOR PROJECTS WITH HANDICAPPED COMPONENTS)

A. Project Expenditures by Type of Handicapped Children Benefiting

Type of Handicap	Expenditures (Estimated)
Trainable Mentally Retarded	$
Educable Mentally Retarded	$ 34,835.00
Hard-of-Hearing	$
Deaf	$
Speech Impaired	$
Visually Impaired	$
Gifted	$
Emotionally Disturbed	$
Crippled	$
Learning Disabled	$
Other Health Impaired	$
TOTAL	$ 34,835.00

B. Project Expenditures in Special Categories

Category	Expenditures (Estimated)
In-service training of staff (including such costs as travel, equipment, salaries, tuition, etc.)	$
Parent Services	$
Model Cities Area Project Activities	$
Preschool Project Activities	$
Kindergarten Project Activities	$
Total	$

This fiscal report is correct and the expenditures included herein are deemed properly chargeable to the Grant Award.

Ruth H. Worrell — (Signature of Project Fiscal Officer)

September 1, 1972 — (Date)

[signature] — (Signature of Project Director)

September 1, 1972 — (Date)

Form: 2
(7-71)

PART III

PROPOSED BUDGET SUMMARY/EXPENDITURE REPORT OF FEDERAL FUNDS
TITLE III, ESEA

Agency's Name and Address
Monticello School District
P. O. Box 517
Monticello, Arkansas 71655

Project Number 13-70-008-0

Budget Period: Beginning Aug. 16, 1970 Ending Aug. 15, 1972

CHECK ONE BLOCK IN EACH COLUMN

/ / Proposed Budget Summary	/ / Component
/ / Estimated Expenditure Report	/ / Local and Other Supportive Costs
/x/ Final Expenditure Report	/x/ Total Costs: Title III, Local, Other Supportive

PART I - EXPENDITURES

EXPENDITURE ACCOUNTS	EXPENSE CLASSIFICATION									
		Salaries								
Functional Classification	Acct. No.	Profes-sional	Non-Pro-fessional	Contracted Services	Materials & Supplies	Travel	Equip-ment	Other Expenses	Total Expenditures	Negotiated Budget
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Administration	100	29,896	11,369		2,152	1,676		2,223	47,315	49,202
Instruction	200	67,740	9,204	1,537	26,013	4,812		4,399	113,705	125,584
Attendance Services	300									
Health Services	400									
Pupil Transportation Servs.	500									
Operation of Plant	600									
Maintenance of Plant	700									
Fixed Charges (Except 830)	800	12,796	1,754					929	15,478	16,402
Leasing of Facilities	830									
Food Services	900									
Student-Body Activity	1000									
Community Services	1100									
Improvement to Sites	1210C									
Remodeling ($2000 or less)	1220C			850	827				1,677	1,900
Capital Outlay (Equip. only)	1230						7,813		7,813	7,912
TOTAL		110,422	22,327	2,387	28,992	6,488	7,813	7,551	185,988	
NEGOTIATED BUDGET		113,250	22,452	5,150	30,092	10,855	7,912	11,284		201,000

APPENDIX A

CROSSETT ATTITUDE INVENTORY

CROSSETT ATTITUDE INVENTORY

Circle Yes if you agree with the statement given.
Circle No if you disagree.

Yes No 1. I like to read.

Yes No 2. Reading is my favorite part of the school day.

Yes No 3. I like recess better than my subjects.

Yes No 4. I like math best of all.

Yes No 5. Reading is fun.

Yes No 6. I like to read to the class.

Yes No 7. My teacher has fun with us in reading.

Yes No 8. I read books at home.

Yes No 9. I do my best in school.

Yes No 10. I like to come to school.

Yes No 11. My teacher enjoys what she is doing.

Yes No 12. I like to talk with my teacher after class.

Yes No 13. I would like to go to school all year.

Yes No 14. I can read well.

Yes No 15. My teacher likes me.

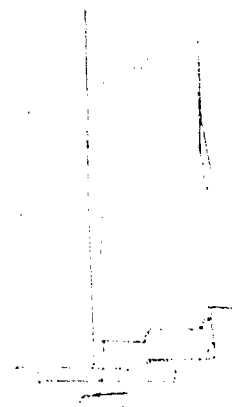
Yes No 16. I want to be a teacher when I grow up.

Yes No 17. My teacher lets us write stories.

Yes No 18. I enjoy making up stories.

APPENDIX B

PRIMARY LEVEL BEHAVIORAL CHECKLIST



PRIMARY LEVEL

C.A. 6—9 yrs.
M.A. 3 yrs.—6 yrs. 9 mons.

Psychomotor Skills

By the end of this developmental period, the learner is, or becomes able to:

	Yes	No	Some-times
(Rolling)			
Lie on mat with feet together, hands at side, look at ceiling, relax and roll eyes in a circle. Keep head and body still.	—	—	—
Lie on back with hands over head and feet together. Roll over slowly to the right, then left. (Can vary by rolling quickly three times to the right, roll back two times to the left.)	—	—	—
Lie on back with ball in hands, hands over head and roll following instructions. (Ex. Roll three times right, then left.)	—	—	—
With one hand over head and the other by side, roll right four times, roll left two times. Exchange arms and repeat.	—	—	—
(Walking)			
Walk straight path to goal and back.	—	—	—
Walk backward following a predetermined course.	—	—	—
Walk to the right, one step at a time, then left.	—	—	—
Walk as above, cross left foot over right foot, then right over left.	—	—	—
Walk and march to music.	—	—	—
Animal walks, rooster, bear, ostrich and duck.	—	—	—
Walk forward on balance beam.	—	—	—
(Crawling)			
Demonstrate creeping—lie on floor on stomach, placing hands under chest. Then, by moving elbows and hips, have child creep forward with stomach touching floor.	—	—	—
Crawl in homolateral pattern moving arm and leg on each side together. Crawl forward to a goal such as a chair or marker, then crawl backward.	—	—	—
Crawl cross-diagonal crawling, moving opposite arm and leg together to a goal. Crawl backward in same pattern.	—	—	—
Crawl alternating homolateral and cross-pattern movements.	—	—	—
Crawl and imitate animals (fast like a horse, slow like a turtle.)	—	—	—
Have timed crawling races (place yarn course for race.)	—	—	—
(Running)			
Run slowly in place, gradually increase pace to hard run, bring knees high, return to slow pace.	—	—	—
Run in place while counting.	—	—	—
n designated route.	—	—	—

	Yes	No	Some-times
Run designated route while being timed	—	—	—
Run obstacle course	—	—	—
Stand on tiptoes and wave arms up and down.	—	—	—
Run on tiptoes, flapping wings.	—	—	—
(Jumping)			
Stand facing another child and jump together while counting.	—	—	—
Jump back and forth over a flat line.	—	—	—
Jump over flat line on right foot, then left foot.	—	—	—
Squat with feet together. Do a deep knee bend and jump forward like a kangaroo.	—	—	—
Squat low on heels. Place the hands, palms down, fingers pointing backward. In this position move the hands forward and bring the feet forward between the hands with a little jump. (rabbit jump)	—	—	—
(Skipping)			
Stand erect and jump forward on the right foot and bring the left foot up to the right	—	—	—
Stand erect and jump forward on the right foot, bring the left foot up to the right, take a step, and jump forward on right foot again. Continue, skipping on right foot only.	—	—	—
Alternate right and left foot in skipping around the room. Teacher may hold child's hand, skipping with him until the movement is learned	—	—	—
Skip to a designated goal.	—	—	—
Skip designs, circles, figure eight. Use music, fast and slow.	—	—	—
Skip on flat line. Relay races, or timed skipping.	—	—	—
Play "The Farmer in the Dell", skip in circle while singing.	—	—	—
(Throwing-Bean Bag)			
Toss bean bag underhanded then overhanded, back and forth to a partner.	—	—	—
Toss underhanded, then overhanded into a box, or at a target. Start with short distance (3 feet) gradually move target farther away.	—	—	—
Throw bean bag up with right, then left hand and catch with both hands.	—	—	—
Throw bean bag up with right hand, catch with the right hand. Repeat only change hands.	—	—	—

	Yes	No	Some-times
Play simple games (Ex. Toss a bean bag, red on one side, blue on one side, boys running if blue shows, girls running if red shows.	—	—	—
Hold bean bag in left hand, throw in a large arc to right hand. Child must judge how hard to throw.	—	—	—
Throw bean bag in the air with the right hand, turn around, and catch with the right hand. Repeat, only change hands.	—	—	—
Toss in the air, touch floor, then catch. Keep eyes on bean bag, not on the floor.	—	—	—

Social Skills

(General or Self)

Recognize and respond to his own name when it is spoken.	—	—	—
Orally state his first name.	—	—	—
State whether he is a boy or girl.	—	—	—
Orally state his full name.	—	—	—
Make known his age.	—	—	—
Recognize and respond to his printed full name.	—	—	—

(Home, Family and Community

Make known the presence or absence of a telephone in his home.	—	—	—
Tell his telephone number.	—	—	—
Name the members of his family.	—	—	—
Show an awareness of community helpers such as firemen, policemen, doctor, dentist, etc.	—	—	—
Make known the general location of his home.	—	—	—
Make known the location of grocery store, church, library.	—	—	—
Make known the various ways and means of transportation.	—	—	—
Tell if and where father and mother are employed.	—	—	—
Tell names of people living near his home.	—	—	—

(School)

State name of teacher, principal, aides etc.	—	—	—
Discriminate between his and others belongings.	—	—	—

	Yes	No	Some-times
Play successfully with others in small groups.	—	—	—
Observe the more obviously essential rules of classroom and school.	—	—	—
Appropriately use simple rules of courtesy such as "please" and "thank you".	—	—	—
Accept and show respect for authority of school personnel.	—	—	—
Locate, name and know use of classroom, restroom, principal's office, lunchroom, playground, etc.	—	—	—
Participate in sharing, taking turns, and cooperating.	—	—	—
Orally state names of classmates.	—	—	—
(Cultural Heritage and Current Events)			
Know about important holidays.	—	—	—
Know about our flag and how to honor it.	—	—	—
Arithmetic			
(Counting)			
Match objects to patterns of objects.	—	—	—
Rote count concrete objects 1-10.	—	—	—
Associate numbers with objects.	—	—	—
Read and write numbers 1-10.	—	—	—
(Measurement)			
Know that a minute and hour help measure time.	—	—	—
Know that there are such things as days, weeks and months.	—	—	—
Know that length is marked off by inches.	—	—	—
Know that money is made up of penny, dime, dollar, nickel, quarter and half dollar.	—	—	—
Know that liquid is measured by cup, pint, quart.	—	—	—
(Vocabulary)			
Know difference in concepts of sizes—big, little, short tall, long.	—	—	—
Have concept of amounts—empty, full, slow, fast, all, part.	—	—	—
Have concept of position—over, under, in front of, behind, top, bottom, left, right, above, below, middle, on each side.	—	—	—

	No	Yes	Some-times
Have concept of location—up, down, in, out, on, off.	—	—	—
Have concept of shape—circle, square, triangle.	—	—	—

Health

Keep objects out of ears.	—	—	—
Control toilet habits.	—	—	—
Keep hands out of mouth, ears and nose.	—	—	—
Know how to keep body clean.	—	—	—
Keep hair clean and neat.	—	—	—
Know when and how to brush teeth.	—	—	—
Know when and how to bathe.	—	—	—
Know self-help skills such as buttoning, lacing, nose blowing.	—	—	—
Know how to wear clothes neatly.	—	—	—
Know to change underwear and socks daily.	—	—	—
Know to wear proper clothing when weather changes.	—	—	—
Know a variety of foods.	—	—	—
Know good table manners.	—	—	—
Have a concept of the proper food to eat for breakfast, lunch and dinner.	—	—	—
Have an awareness of the danger of overeating, undereating, eating between meals and too many sweets.	—	—	—
Wash dishes properly.	—	—	—
Know proper bed hours.	—	—	—
Sit, walk and stand properly.	—	—	—
Feel free to share personal problems with teacher.	—	—	—

Communicative Skills

(Oral)

Eliminate infantile expressions.	—	—	—
Express his needs verbally in a courteous way.	—	—	—
Learn to respond to others with courteous answers.	—	—	—

	Yes	No	Some-times
To enjoy simple conversation.	—	—	—
Use common greetings and responses, such as hello, thank you, please.	—	—	—
Tell about his experiences, possessions, and interest.	—	—	—
Pronounce words correctly and to enunciate clearly.	—	—	—
Speak in sentences.	—	—	—
Understand spatial order--first, second, next, last.	—	—	—
(Pre-writing)			
Control large muscle movements.	—	—	—
Begin to control small muscle movements.	—	—	—
Develop eye-hand coordination and finger dexterity.	—	—	—
Assemble simple puzzles.	—	—	—
Hold and use crayons and large pencils.	—	—	—
Color within lines.	—	—	—
Trace lines and dots, and stay within lines.	—	—	—
(Pre-reading)			
Recognize and associate colors with pictures and objects.	—	—	—
Recognize shapes of objects.	—	—	—
Recognize size and position when association is made of pictures and objects.	—	—	—
Tell the names of objects that rhyme.	—	—	—
Recognize likenesses and differences in pictures and objects.	—	—	—
Develop laterality--left, right, front, back, top, bottom.	—	—	—
Display interest in books.	—	—	—
(Listening)			
Pay attention by listening.	—	—	—
Learn and respond to his own name.	—	—	—
Recognize familiar sounds in his immediate environment.	—	—	—

	Yes	No	Some-times
Listen and develop a habit of following one-step, two-step, three-step directions.	—	—	—
Listen to short stories and nursery rhymes.	—	—	—
Listen to music-records, radio and television.	—	—	—
Listen attentively to assembly programs.	—	—	—

APPENDIX C

INTERMEDIATE LEVEL BEHAVIORAL BHECKLIST

INTERMEDIATE LEVEL

C.A. 9-12 years
M.A. 4 yrs. 6 mons—9 yrs.

Social Skills	Yes	No	Some-times
(General or Self)			
Knows and can tell his address or location of home.	___	___	___
Develops personal preferences in selection of games, food, clothing and friends.	___	___	___
Develops behavior which leads to good interpersonal relationships.	___	___	___
Develops feelings of self-worth.	___	___	___
(Home, Family and Community)			
Develops self-care activities in the home such as personal cleanliness, care of clothing, proper use of eating utensils and care of his room.	___	___	___
Knows rules of cooperation in such family activities as conversation and radio, family parties, and use of the telephone.	___	___	___
Knows proper behavior at a movie, on the bus, in a restaurant, in a library and in a swimming pool.	___	___	___
Knows how to meet and greet friends and neighbors in a socially accepted manner.	___	___	___
Knows how to meet strangers with acceptable caution.	___	___	___
Knows how to use the telephone with socially accepted practices and courtesies.	___	___	___
Knows and is able to practice proper table manners.	___	___	___
Knows the improtance of the family and the responsibility of the individual to the family.	___	___	___
Realizes the importance of taking pride in the home surroundings.	___	___	___
Knows how to report a fire or contact police.	___	___	___
(School)			
Knows and can tell the names of his classmates.	___	___	___
Knows how and why we wait our turn at the drinking fountain, leaving the classroom and boarding and leaving the school bus.	___	___	___
Can use simple good manners at the table.	___	___	___
Accepts his responsibilities as a participating member of a group.	___	___	___

Understands and practices punctuality. ___ ___ ___

Understands how school experiences prepare boys and girls for everyday living. ___ ___ ___

Knows the importance of good health and grooming. ___ ___ ___

Observes courtesy and good manners in others. ___ ___ ___

(Cultural Heritage and Current Events)

Knows about Columbus, Washington, Lincoln, etc. ___ ___ ___

Knows that many communities make up our country. ___ ___ ___

Knows why we vote. ___ ___ ___

Knows that a mayor, governor and president are our important leaders. ___ ___ ___

Arithmetic

(Counting)

Can count to 100. ___ ___ ___

Understands number symbols to 25. ___ ___ ___

Can write number symbols to 50. ___ ___ ___

Knows what number comes before and after given number. ___ ___ ___

Understands ordinals from 1st to 3rd. ___ ___ ___

Understands addition and subtraction to 10. ___ ___ ___

Can count by two's, five's and ten's to 100. ___ ___ ___

Understands such as—many, some, more, less, add and subtract. ___ ___ ___

Understands what $\frac{1}{2}$ means. ___ ___ ___

(Measurement)

Recognizes the ¢ and $ signs. ___ ___ ___

Knows that five pennies make a nickle, two nickles make a dime, two quarters make a half dollar and etc. ___ ___ ___

Know how to tell time by hour and half hour. ___ ___ ___

Begins to understand calendars, days, months, and years. ___ ___ ___

Understands morning and afternoon, a.m. and p.m. ___ ___ ___

Understands what an inch, foot and yard are. ___ ___ ___

Can identify pint, quart and gallon.

Health and Safety

Stays out of medicine cabinet. ___ ___ ___

Understands who can help him when hurt. ___ ___ ___

Is able to follow fire drill exercises. ___ ___ ___

Able to play on playground equipment safely. ___ ___ ___

Understands the dangers of playing in the street or alleyways. ___ ___ ___

Understands and obeys traffic signals. ___ ___ ___

Understands dangers of getting too close to swimming pools, lakes, rivers. ___ ___ ___

Stays away from railroad tracks. ___ ___ ___

Understands dangers of gas and other inflammables. ___ ___ ___

Understands simple safety rules for fire prevention. ___ ___ ___

Understands proper way to put out a small fire. ___ ___ ___

Understands to stay away from power tools found around the house. ___ ___ ___

Understands pedestrian laws. ___ ___ ___

Can point to the major parts of the body. ___ ___ ___

Can recognize common foods and tell when they are usually eaten: Breakfast, lunch, dinner. ___ ___ ___

Can help wash dishes properly with hot water, and soap. ___ ___ ___

Knows that eggs hatch chickens, other animals have babies. ___ ___ ___

Begins to develop good eating habits such as: eats what is on his plate, learns to eat a variety of foods, to chew properly and does not rush. ___ ___ ___

Recognizes boys and girls are different. ___ ___ ___

Communicative Skills
(Oral)

Speaks loudly enough without shouting. ___ ___ ___

Shares experiences with peer geoup. ___ ___ ___

Speaks in complete sentences. ___ ___ ___

Can make introductions and announcements. ___ ___ ___

Knows how to ask for directions and help.

Knows how to give simple directions. ___ ___ ___

Speaks in turn. ___ ___ ___

(Writing)

Writes his name. ___ ___ ___

Copies complete sentences. ___ ___ ___

Begins sentences with capital letters. ___ ___ ___

Develops a usable written vocabulary. ___ ___ ___

Begin cursive writing. (Some may reach this point). ___ ___ ___

(Reading)

Reads the letters of the alphabet. ___ ___ ___

Reads signs and labels to take care of own needs such as men, women, boys and girls, poison. ___ ___ ___

Reads simple work sheets and follows the written instructions. ___ ___ ___

Knows consonant sounds and blends. ___ ___ ___

Knows beginning and ending sounds. ___ ___ ___

Recognizes word families. ___ ___ ___

Recognizes names of towns and states. ___ ___ ___

(Listening)

Develops auditory discrimination. ___ ___ ___

APPENDIX D

JUNIOR HIGH BEHAVIORAL CHECKLIST

JUNIOR HIGH LEVEL

C.A. 12-15 yrs.
M.A. 6 yrs.-9 yrs.

By the end of this developmental period, the learner is, or becomes able to:

Social Skills	Yes	No	Sometimes
Participate in school activities	___	___	___
Select suitable entertainment activities.	___	___	___
Share responsibilities in group activities.	___	___	___
Participate in group sports and other recreational activities.	___	___	___
Know acceptable dating procedures.	___	___	___
Develop acceptable boy-girl relationships.	___	___	___
Know the basic steps in social dancing.	___	___	___
Be truthful, dependable, and tolerant.	___	___	___
Accept and profit from constructive criticism.	___	___	___
Maintain good posture.	___	___	___
Select and wear appropriate clothing.	___	___	___
Know how health practices contribute to personal appearance.	___	___	___
Know how to make social introductions.	___	___	___
Know and use appropriate behavior and courtesies in social situations.	___	___	___
Use good grooming, appropriate dress, and good health practices.	___	___	___
Home and Community			
Know the components of good family life.	___	___	___
Know the importance of proper care of infants.	___	___	___
Know the good housekeeping practices.	___	___	___
Understand the value of sound budgeting practices.	___	___	___
Understand what is meant by public utilities.	___	___	___
Know about repair services	___	___	___

Know and practice acceptable behavior and etiquette in public places. ___ ___ ___

Know and respect the duties of community service personnel. ___ ___ ___

Know the major industries of the community. ___ ___ ___

Health

Have a realistic concept of his abilities and talents. ___ ___ ___

Develop good mental health. ___ ___ ___

Distinguish among different qualities of food. ___ ___ ___

Prepare simple meals. ___ ___ ___

Know what constitutes a balanced meal. ___ ___ ___

Know elementary symptoms which indicate a need for medical attention. ___ ___ ___

Know simple first aid procedures. ___ ___ ___

Know the harmful aspects of the use of drugs, tobacco, and alcohol. ___ ___ ___

Develop acceptable sex attitudes. ___ ___ ___

Understand and accept body changes. ___ ___ ___

Have some understanding of basic bodily functions. ___ ___ ___

Recognize the need for body deodorant. ___ ___ ___

Safety

Prevent accidents or accident-potential situations. ___ ___ ___

Know about health hazards and how to prevent them. ___ ___ ___

Swim, if possible, and to know water safety rules. ___ ___ ___

Use power mowers properly. ___ ___ ___

Be aware of poisonous plants, animals, medicines, and household products. ___ ___ ___

Know the value of maintenance. ___ ___ ___

Read and understand warning signs and balels. ___ ___ ___

Cultural Heritage and Current Events

Know about national holidays and about important persons and events in our national history. ___ ___ ___

Know about governmental organization and officials (local, state and national) ___ ___ ___

Understand democratic procedures, including voting. ___ ___ ___

Know about important current events. ___ ___ ___

Vocational Skills

Know about various job areas. ___ ___ ___

Use and care for simple tools and materials. ___ ___ ___

Understand how hours and wages are related. ___ ___ ___

Take pride in good workmanship. ___ ___ ___

Follow directions. ___ ___ ___

Communicative Skills

(Listening and Speaking)

Improve his listening and speaking skills. ___ ___ ___

Enlarge his vocabulary. ___ ___ ___

Use oral language acceptably in social situations. ___ ___ ___

Speak before classmates with confidence. ___ ___ ___

Be an attentive listener. ___ ___ ___

(Reading)

Read an increasing variety of materials, including newspapers and magazines. ___ ___ ___

Read and understand TV, radio and movie listings. ___ ___ ___

Use catalogs, telephone directories, dictionaries. ___ ___ ___

Use the library. ___ ___ ___

Use road maps. ___ ___ ___

Understand postal terms. ___ ___ ___

(Writing)

Write legibly and accurately in manuscript and cursive. ___ ___ ___

Use adequate punctuation, capital letters, and common abbreviations. ___ ___ ___

Write friendly letters. ___ ___ ___

Complete blank forms. ___ ___ ___

(Spelling)
Use the correct usage and meaning of words. ___ ___ ___

REcognize independent parts of words. ___ ___ ___

Learn to spell essential words encountered in all curriculum areas. ___ ___ ___

Number Concepts

(Numbers)
Be able to apply number skills to everyday problems ___ ___ ___

Use fractions up to and including eights. ___ ___ ___

(Money)
Count and make change. ___ ___ ___

Compute sales tax. ___ ___ ___

Know how to read advertisements perceptively. ___ ___ ___

Compare values and prices when shopping. ___ ___ ___

Recognize real versus apparent bargains. ___ ___ ___

Know pros and cons for quantity buying. ___ ___ ___

Budget available money. ___ ___ ___

Understand installment buying. ___ ___ ___

Understand importance of saving. ___ ___ ___

Be aware of services banks render. ___ ___ ___

Understand per cent. ___ ___ ___

Understand what "interest" means. ___ ___ ___

(Time)
Read roman numerals on clock faces. ___ ___ ___

(Measurement)
Understand and use all ordinary units of measure ___ ___ ___

Use all ordinary measuring devices. ___ ___ ___

APPENDIX E

PRIMARY LEVEL OBJECTIVE TABULATION FORM

PSYCHOMOTOR SKILLS

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavorial Objectives Achieved
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			

TEACHER _____ LEVEL _____

COMMUNICATIVE SKILLS

	Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				

TEACHER _____ LEVEL: _____

SOCIAL SKILLS

	Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				

TEACHER _____ LEVEL _____

ARITHMETIC

	Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
1.				
2.				
3.				
4.				
5.				
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18.				

Teacher _____ LEVEL: _____

HEALTH

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
1.			
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TEACHER _____ LEVEL _____

APPENDIX F

INTERMEDIATE OBJECTIVE TABULATION FORM

COMMUNICATIVE SKILLS

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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18.			

TEACHER _____ LEVEL: _____

SOCIAL SKILLS

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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2.			
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TEACHER _____ LEVEL _____

ARITHMETIC

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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18.			

Teacher _____ LEVEL: _____

HEALTH and SAFETY

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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TEACHER _____ LEVEL: _____

APPENDIX G

JUNIOR HIGH OBJECTIVE TABULATION FORM

SOCIAL SKILLS

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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TEACHER _____ LEVEL _____

HOME and COMMUNITY

	Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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3.				
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TEACHER _____ _____ LEVEL _____

HEALTH

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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TEACHER _____ LEVEL _____

SAFETY

	Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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2.				
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TEACHER _____ LEVEL _____

CULTURAL HERITAGE and CURRENT EVENTS

	Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
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TEACHER _____ LEVEL _____

VOCATIONAL SKILLS

Student	Diagnosis of Student Behavior (Number of check-list items checked "No" or "Sometimes")	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved
1.			
2.			
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TEACHER _____ LEVEL _____

APPENDIX H

WARREN ATTITUDE & INTERESTS INVENTORY

ATTITUDE AND INTERESTS INVENTORY
WARREN SCIENCE PROJECT
1971-72

Circle your answer.

Yes No 1. Does your teacher have lots of fun with you?

Yes No 2. Does your teacher let you talk about different things in class?

Yes No 3. Is it easy to talk with your teacher?

Yes No 4. Does your teacher make it fun to study things?

Yes No 5. Do you wish you could have this teacher next year?

Yes No 6. Is your teacher good at explaining things clearly?

Yes No 7. Does your teacher make sure that each student gets a chance to talk in class?

Yes No 8. Do you enjoy coming to school?

Yes No 9. Is school work hard for you?

Yes No 10. Do you really like your subjects?

Yes No 11. Do you feel that science class is the best part of the school day?

Yes No 12. Do you think the science books you have in school are interesting?

Yes No 13. Is science interesting to you?

Yes No 14. Do you like to explain science experiments to the class?

Yes No 15. Do you like to do all different kinds of science projects?

Yes No 16. Do you think science is important?

Yes No 17. Would you like to spend more time in science class?

Yes No 18. When you have some free time, do you like to read about famous scientists, great inventions, or space travel?

Yes No 19. Does science really make you feel good?

Yes No 20. Is science important to what you want to do when you finish school?

APPENDIX I

WARREN SCIENCE PREFERENCE SCALE

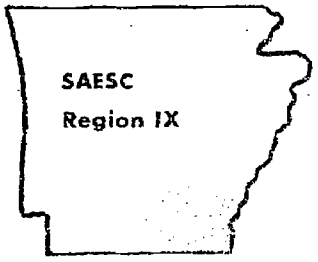
SCIENCE PREFERENCE SCALE

Circle the subject that you like best in each of the boxes.

Science Math	Spelling Reading	History English
Spelling Math	Geography Reading	Science Reading
History Reading	Science History	History Math
Geography History	Spelling Science	History Spelling
Spelling Geography	English Spelling	Science English
English Reading	Geography English	Math English
Geography Science	Math Geography	Reading Math

APPENDIX J

DISSEMINATED MATERIALS· NEWSLETTER



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INTRODUCTION TO THE 1971-72 SAESC PROJECT

The Southeast Arkansas Education Service Center (SAESC) Project ended its first year of operation on August 15, 1971. The current Title III program is designed to promote innovative educational projects and provide assistance to the thirty-five school districts in eight counties of Southeast Arkansas. These counties are Ashley, Bradley, Calhoun, Chicot, Cleveland, Desha, Drew, and Lincoln. The eight counties comprise Region IX under the State Plan for Title III.

The SAESC will operate with four certified staff members and two secretaries again this year. The staff members and their positions are as follows:

Director:
George J. Parker is the Director of the SAESC, replacing Dr. Curtis Merrell. Dr. Merrell is the new Superintendent at Monticello. Mr. Parker has had six years of public school experience in St. Louis County, Missouri, and seven years of college teaching and administrative experience in Arkansas. He has been involved in Educational Administration doctoral studies at the University of Arkansas during the past one and one-half years. He has recently completed his Ed. D. requirements.

Research & Evaluation Specialist:
Stan Williams, who will recieve his Doctorate in Educational Administration from the University of Arkansas in May, 1972, has replaced Dr. Joe May in this position. Dr. May resigned to accept a teaching position at South western University in Lafayette, La. Mr. Williams, a former high school mathematics and science teacher in Arkansas, also served as a high school principal two years. Mr. Williams has been a graduate assistant in statistics and research during the past two years at the University of Arkansas.

Special Education Coordinator:
Mrs. Sue Hickam, a graduate of Arkansas A & M College and recipient of a Masters Degree in Special Education from State College of Arkansas, is beginning her second year on the SAESC staff. Mrs. Hickam has several years teaching experience in Special Education, including experience in the

Drew Central School District and at the Children's Colony in Conway. Mrs. Hickam pursued educational preparation in the area of Psychological Examining during the past summer.

Reading Specialist:
Mrs. Eleanor Stephenson, also a graduate of Arkansas A & M College, is in her second year with the SAESC staff. Mrs. Stephenson holds a Masters Degree, with a major in reading, from the University of Mississippi. Mrs. Stephenson has several years teaching experience in reading, including experience in the Crossett, Drew Central, and Fountain Hill school districts.

Secretaries:
Mrs. Juanita Rogers and Mrs. Kathleen Rash return as Title III secretaries. Mrs. Rogers is in her sixth year with Title III and Mrs. Rash is in her fifth year with Title III.

AREAS OF ASSISTANCE FROM THE SAESC

1. Planning and establishing feasible Special Education Programs.
2. Administer individual psychological tests for Special Education placement.
3. Developing units of study to upgrade the curriculum of Special Education classes.
4. Helping Special Education Teachers stay abreast of current developments in Special Education.
5. Developing an evaluation program for Special Education Classes.
6. Improving existing reading programs.
7. Diagnosing individual students' reading problems and developing programs to help overcome the deficiencies.
8. Developing remedial reading programs.
9. Selecting graded library books to help strengthen independent reading activities.
10. Providing teachers with aids, suggestions and materials to help them become more effective teachers of reading.
11. Developing, writing, and utilizing behaviorial objectives for the purpose of describing program outcomes.
12. Assessing program needs, planning and evaluating program objectives, writing program objectives, selecting evaluation procedures, monitoring the program that is implemented, and providing feedback analysis of the implementation.
13. Utilization of basic skills of listening, questioning, utilizing student ideas, and the structuring of responses.
14. Developing orientation programs for new teachers.
15. Developing Teacher Evaluation Procedures.
16. Organizing class schedules.
17. Developing systems approach to administration.
18. Illustrating computer application to education.
19. Providing information for in-service education work in the areas of:
    a. Systematic instructional decision making
    b. Educational objectives

c. Selecting appropriate educational objectives
d. Establishing performance standards
e. Appropriate practice
f. Perceived purpose
g. Evaluation
h. A Curriculum rationale
i. Defining content for objectives
j. Identifying affective objectives
k. Analyzing learning outcomes
l. Knowledge of results
m. Teaching units and lesson plans
n. Teaching of Reading
o. Discipline in the classroom
p. Modern measurement methods
q. Instructional supervision
r. Experimental designs for school research

PILOT PROJECTS

In addition to the many and varied services available from the staff, the SAESC is sponsoring four Pilot Projects in Region IX Schools. The development of these Projects has required a lot of time, effort, and money. We encourage you to have someone from your school visit these Pilot Projects. The title of each Pilot Project and the person to contact for visitation arrangements follows:

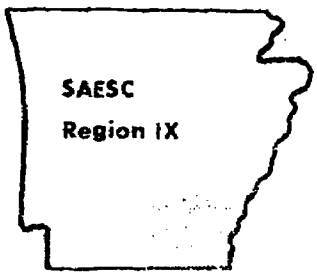
1. An Exemplary First Grade Instructional Program - Crossett
   Mr. J. W. McCormick 364-2522

2. An Exemplary Special Education Work Center - Crossett
   Miss Gussie Price 364-4621

3. An Exemplary Lower Elementary Reading Program in Southeast Arkansas - Parkdale
   Mr. Dwight Hutto 473-4621

4. An Exemplary Approach to Learning Activities in Science for Fifth and Sixth Grade Students - Warren
   Mr. Malcom Causey 226-2351

For assistance from SAESC, you may contact the individual staff members or the Director.



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• NEWS LETTER •

VOL. 1 NO. 1 ESEA TITLE III NOV. -DEC., 1971

REMEMBER THE QUOTE?

"Be not the first by whom the new is tried, nor the last to lay the old aside." This may well describe the philosophy adherred to by education in general. The reluctance to attempt unproven approaches to teaching is quite evident. Let there be a glimmer of hope that it may be beneficial and the bandwagon becomes overloaded with those who would have you believe they were the innovators.

While the afore-mentioned philosophical quote is a practical, and by necessity in some instances, adherred to practice for many educators, there is little doubt that any culture or society could abide by it one hundred percent. Someone must be the first to try a new idea! Think of the modern day convenience which would be missing if they didn't. And possibly more important to education -- think of the creativity and innovative ideas which would be squelched. Sure, there have been some blunders and some apparently harmful results from experiments. But, think about it -- haven't "the good things outweighed the bad" (to paraphase a modern day song).

Whether you agree or not human nature is such that the untried, unconquered, and unfound are always going to be the challenge to those few with the prioneering spirit.

What's the purpose of all this? -- Just to say there are many (and those in Southeast Arkansas are among them) who are grateful for the opportunities to explore new avenues of teaching and learning (if the two can be separated)!

The quote more in keeping with our (SAESC Title III and Southeast Arkansas Schools) philosophy might be "It is better to have tried, even if we fail, than not to have tried at all."

It was exciting to learn that approximately one-half of the Region IX schools were interested in pilot projects under the "to be formulated Title III proposal, SEARCH, (Southeast Arkansas Research and Cooperative Hub)". The Advisory Council for Region IX approved nine of these pilot projects to be included in the SEARCH Proposal. There may be some individual school districts submitting

proposals, also. All of these factors indicate Southeast Arkansas Region IX is on the move - - searching for new and better methods to provide education!

NON-GRADED FOR ALL -- ALL FOR READING

Superintendent Opal Crow of Desha Drew is excited about the results of a non-graded junior high school reading program they initiated last year.

Every junior high school teaches reading during the first period of the day and every student, regardless of grade, participates at his performance level. Each teacher is with approximately thirteen students during this time, thus permitting individualized attention of far greater proportions than is feasible in the normal classroom situations.

Presently, test results are indicating reading improvements, since the one year operation of the program, of almost twice what they were for previous groups.

Obviously, there has been a great deal of time, effort, and planning go into a program of this nature. Congratulations to Superintendent Crow and his staff! Incidentally, some of the staff members devote preparation time to this program, but some have indicated it's the most productive and worth-while part of their day.

THINK ABOUT THESE - -
Taken from the "Olds Observer
V.I. No. VIII. 1971

Paperback Boom!
Paperback books have come into their own since the first few titles were issued after World War II. Ten years ago, there were 15,000 paperback titles in print; today, there are more than 80,000. A survey by the Periodical and Book Association indicates that, at all age levels, reading a paperback book is favored over going to the movies, buying a record, or any sport.

Self Sufficient?
Are you educated? Sidney Herbert Wood, a prominent English educator, had three tests. Anyone passing them, according to Wood, could consider himself an educated man.

The tests were represented by three questions: 1) Can you entertain a new idea? 2) Can you entertain another person? 3) Can you entertain yourself?

Hunting the Helpful Hobby
Looking for a new hobby? Oil painting, carpentry, ornithology, photography? Before you decide on one, figure out what you want a hobby to accomplish for you. Do you want to have fun? Do you want to earn money?

Do you want to learn something new? According to an article in the American Medical Association's magazine, Today's Health, a good hobby will offer many satisfactions: 1) It will help you relax and put your problems into the background for the time being; 2) The activity itself will give real satisfaction; 3) It will be more than a mere time-waster; 4) It will produce something worth producing, either tangible or intangible; 5) It will increase your knowledge and skills; 6) It will cost no more than you can afford - - and may even produce revenue.

MACMILLAN READING WORKSHOP

Mrs. Louise Green, a consultant from the Macmillan Company, conducted a two day reading workshop for Crossett and Parkdale Elementary teachers at Crossett on November 9 and 10, 1971. The workshop included a class presentation using first grade students at Price Elementary School and suggestions of uses of many of the Macmillan Basic Reading materials.

RULING

Minnesota school financing has been found unconstitutional in the second such ruling in the past two months. The first came in California. The ruling in Minnesota could have even larger emphasis since the decision came from U. S. District Court Judge Miles M. Lord.

Judge Lord found the state's school system biased in favor of the wealthy because of reliance upon real estate values. In making a ruling in the private lawsuit. Lord suggested an overhaul of the state's financing by the legislature. The ruling was made under the equal protective clause of the 14th amendment.

Equalization suits were entered recently in New York and Michigan on the basis of unequal per pupil expenditure in contigious school districts. The New York suit was brought by a private citizen in Yorktown complaining of real estate voluates of only $20,400 per pupil against 69,000 in the adjoining Montrose School District. What school district in Region IX wouldn't like to have even $20,000 per pupil assessed valuation?

TEACHER EVALUATION

A recent study of teacher evaluation in the secondary schools indicated that the achievement of the students in a teachers class was the criterion most frequently emphasized by principals in their evaluations of teachers. The teacher's instructional performance in the classroom and the teacher's classroom control were the two criteria in second place. These two criteria received almost equal emphases. The most interesting finding was that there was relatively little agreement among the principals concerning the criteria on which teachers should be measured.

Those who advocate the use of student achievement feel that this is the product of the teachers efforts and that is the only evidence of the success of the teacher. However, many outside factors affect student achievement. Much of the motivation for achievement comes from the home environment. We all realize that many students are not encouraged by their parents to do their best in school. Thus two teachers of equal ability may have classes with extremely different motivation. One teacher's students will show gains, another will not. Yet the teachers are equal. Secondly, teachers will become aware that their evaluation depends upon their students' scores on a particular standardized test. This will result in teaching the test and will in effect be saying that the materials tested by the standardized test is the knowledge of most worth. This cannot be true because standardized tests only represent a random sample of knowledge with no continuity or meaning.

Louis Raths, in Teaching for Thinking, has stated that teachers are paid to teach and that this is the performance on which they should be evaluated. He has developed a list of ten components of teaching which can be easily identified by observation. His plan for evaluation consist of evaluating the teacher's instructional performance on the basis of the presence or absence of these ten components. The number of these need for rehiring a teacher is determined by the individual school system. The teachers ability to control students is impossible to separate from instructional proficiency. Since the teacher's ability to instruct is the purpose for which she is employed, it seems reasonable to believe that how well she instructs should be the criteria for evaluation for this depends on her ability and not on various other factors. If the instruction is of high caliber student control problems and student achievement will be satisfactory.

Since schools are being held more and more accountable, they will be in the near future accountable for what they are getting from funds spent for teachers' salaries. This will mean that a suitable plan for teacher evaluation must be developed. Rath's suggestions have some merit and with some adaptation could conceivably provide a basis for this plan. Certainly, his ideas are better than interaction analysis methods and pseudo-scientific rating scales that cover a variety of secondary criteria.

STANDARDIZED TESTS

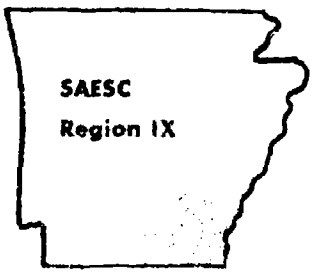
Many school administrators in Region IX are expressing concern over the below grade level scores of their students on standardized achievement tests. There seems to be a need for some regional norms for standardized tests. There is a definite need for a more careful selection of standardized tests. The following represents some observations on standardized tests.

Many standardized tests contain items that are poorly constructed and cause students to miss items they actually know. A few of these can cause students grade level equivalent to drop as much as half a grade level. For example, one

test has the word "hanger" and pictures that of an airplane hangar and a clothes hanger. Many students will select the airplane hangar. How many students know that there is a difference in the spelling of the two? Many other examples of cultural differences causing incorrect responses can be found. Therefore, one should consider this when looking at grade level equivalents.

Before deciding upon a standardized test, order a specimen set and carefully check each item to determine if the test actually measures the objectives of your program, to determine if the items are sound to determine the similarities of the population on which the list was standardized to your situation and to check the reliability and validity figures in the manual. If possible, read evaluations of each test in the mental measurement year book. If you do not have anyone who is trained in test evaluations, consult an evaluation specialist. Persently two books are out which provide evaluations of all kindergarten and pre-school tests, and all elementary achievement tests. These will soon be in the professional library of the SAESC staff.

Caution should be exercised in the interpretation of gain scores on achievement tests. These do not necessarily represent true gains. To get a more accurate picture, gain score should be converted to true gain scores. The reason for this is because of the guessing factor that enters the test scores. Also low achievers can more easily show a gain than a high achiever. In other words, it is much easier to show a gain with students in remedial classes than students in honors classes on a standardized test. All tests have a lower reliability for low scorers than for high scorers. The SAESC staff will be happy to provide you with information on test and assistance in the selection of standardized instruments.



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• NEWS LETTER •

Vol. 1 No. 3 ESEA Title III Jan. - Feb., 1972

DUMAS STUDENTS AND TEACHERS PUT IT TOGETHER

Through the efforts of progressive-minded educators, Superintendent Harold Tidwell and Elementary Coordinator, Mr. Jim Williams, the Dumas Elementary Schools embarked upon the "Open Classroom" approach. Operating under this method for the second year, its popularity, among participating teachers and students, has increased greatly over the first year. More importantly, the interaction among students and teachers has made for a healthier educational and social climate.

Estimates up to 20 percent overall improvement in achievement over the formerly used self-contained classrooms are being projected.

This pioneering effort is another example of the initiative and spirit of administrators, teachers, and communities in Southeast Arkansas to provide the best education possible. SAESC Title III congratulates Dumas' administration and teachers.

SERVICE PROJECTS

Participation in one major study, the Drew Central-Monticello Schools Evaluation, and the initiation of another, a comprehensive salary study of certain South and Southeast Arkansas school districts' professional staffs have been major areas of concentration recently for Dr. Williams and Dr. Parker of the Title III SAESC Staff.

Dr. Williams, SAESC Research and Evaluation Specialist did a comprehensive study of the two districts, Monticello and Drew Central, curriculums. Dr. Parker's efforts were concentrated in the areas of enrollments, food services, and facilities. Dr. Kenneth Farthing and Dr. Glen Cochran from the University of Arkansas served as co-directors of the study. Aforementioned Title III personnel were instrumental in collecting, summarizing, analyzing, and reporting on major portions of the study.

A study of this nature is a "first" for Southeast Arkansas and could prove valuable as reference for future school evaluations, administrative procedures, and total educational programs for this area.

Various school personnel, teachers as well as administrators, have indicated their interests in a comprehensive study of salary schedules of area school districts.

Dr. Parker initiated this study January 24 and plans to conclude it by March 10. Summaries of the study will be available to individuals requesting it.

Dr. Williams has been involved in preparing for a panel discussion of "Year-Around School" programs. Dr. Dan Pilkinton, Executive Director of Arkansas School Board Association, is laying the groundwork for this program which is to be presented February 28 in Little Rock.

Several schools in Region IX (the areas served by SAESC, Title III) have expressed interest in this study. SAESC has provided certain materials to Dr. Pilkinton's office and feels this study will be a fruitful venture. Several administrators in the area have expressed concern and interest in this study. Dr. Pilkinton is to be commended for his direction and preparation of this much needed program.

"Educational Renewal Site" has become a popular, although not well defined, term among educators in the public schools as of late. Dr. Parker and Dr. Williams served as consultants in making efforts to determine the most feasible use of such a site to serve the many educational needs of this area. The Educational Renewal Site of four contiguous districts (Warren, Wilmar, Drew Central, and Monticello) was submitted as a rural site. Future educational benefits of Southeast Arkansas should be realized if the proposed Site is chosen.

EDUCABLE MENTALLY RETARDED SUCCEED AGAIN

The Christmas Program and Bazaar sponsored by the Crossett Special Education Department was held December 7, 1971 in Calhoun Elementary School. The program was entitled "Yearly Convention of Old Santa Claus' Toys". Students from four elementary EMR classes and one middle school EMR class participated.

The total bazaar profits exceeded $500.00. This money will be used to buy additional materials and supplies to be used in the special education program. The children involved in the program reaped many benefits that are not monetary or measurable, for example, the feeling of accomplishment and selfworth. Retarded children can succeed and will if given the opportunity.

CROSSETT SPECIAL EDUCATION GUIDEBOOK

The Crossett Special Education Department is presently involved in developing a guidebook for their Special Education program. The guidebook will include the following: philosophy; program standards; selection and placement of children; teacher certification; report cards; work center program; performance checklists for primary, intermediate and junior high level; writting of behavorial objectives; evaluation forms, and work study program.

The guidebook will be completed early in February. Anyone interested in the guidebook should contact Miss Gussie Price, Special Education Supervisor, Calhoun Elementary School, Crossett.

HAMPTON STARTS SPECIAL EDUCATION

Hampton Public Schools started an elementary EMR class at semester. Plans to organize the program were started in the early fall. The individual testing for student placement was conducted by SAESC, Title III, Special Education Coordinator, Sue Hickam.

Mrs. Mike Johnston was employed as the special education teacher for Hampton. Mrs. Hickam worked closely with Mr. Charles Payne, Superintendent and his staff in organizing and implementing the program.

READING HANDBOOK DEVELOPED

Mrs. Eleanor Stephenson, SAESC Title III Reading Specialist, has just completed a handbook for parents on "Parents and the Reading Program." The handbook contains a list of suggestions on how parents can be of help to their children in the reading process. In connection with the booklet, Mrs. Stephenson will be working with the parents and teachers of elementary students in the Fountain Hill School on how parents can help their children become better readers. The parents will also receive suggestions on how to help their child develop good study habits.

Comprehension or reading for meaning is one of the most difficult reading skills to be taught. Mrs. Stephenson has been working with area teachers on developing and strengthening of their skills for teaching comprehension. Many handout sheets have been prepared and distributed containing suggestions for activities in developing comprehension skills. The handout sheets can be filed by the teacher and be readily accessible when needed.

WARREN SCIENCE PROJECT

The students in the sixth grade science classes at Warren's Westside Elementary School have a new science teacher. Mrs. Judy Gibson has replaced Mrs. Shirley Griggs, who had taught in the Title III Science Project for the past year and a half. Mrs. Gibson will be teaching the two experimental and the two control classes in the research project which is attempting to assess the value of laboratory equipment and instructional aids in improving student achievement in science. Mrs. Gibson is an experienced elementary teacher, but this is her first experience teaching science in a departmentalized setting. The fifth grade classes in the Science Project are taught by Mrs. Martha Huey, who has taught experimental classes since the project was initiated in September, 1970.

Both teachers receive two hours of in-service assistance every two weeks from Mr. Wayne Devine of the University of Arkansas at Monticello Science Department. These in-service sessions are used to coordinate filmstrips, instructional aids, models and laboratory equipment with each unit in the textbook. This insures the maximum utilization of the facilities and equipment in the special science classroom.

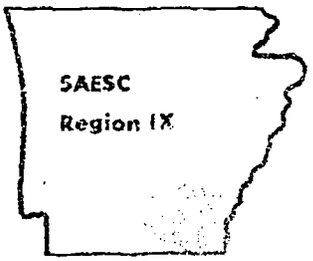
A second purpose of the project is to improve students attitudes toward science and toward school. Pre-test results from the third week of school indicated that the

attitudes of the students were exceptionally good. This will make it difficult to show a gain in attitude on the post-testing because the students had already become enthusiastic about science before the pre-test could be administered. This resulted from their previous exposure to the laboratory, the equipment and the teachers. From the outward appearance and the enthusiasm of the students, one would expect that the gain in student achievement would be significant.

EDUCATION IN ACTION

Dates to Remember

February 16 - "Reading Workshop" - Wynne 9:30 a.m.
February 21 - Schoolmasters - UAM 6:00 p.m.
Feburary 21 - Ark. School Study Council - L.R. School Board Office 9:00 a.m.
February 28-29 - Arkansas State School Board Association Meeting - Little Rock
February 29 - March 1 - Mobile Art Unit - City Park Elementary - Monticello
March 6-7 - "Open Classroom Workshop" - Fayetteville
Now to March 10 - District and State Basketball Play-offs
Coming soon a study on Open vs Closed Campuses in Arkansas



Southeast Arkansas

Educational Service Center

Region IX

P. O. Box 517 • Telephone 367-6864

Monticello, Arkansas 71655

• NEWSLETTER •

Vol. 1 No. 4 ESEA Title III Mar. - Apr., 197

ON-SITE

March 21-22 were set aside by the SAESC Staff for evaluation procedures as conducted by the thirteen-member team headed by Mr. Charles Watson from the State Title III Department of Education.

SAESC Staff members and Area IX educators involved were highly complimentary of the interest, effort, and organization shown by the Evaluation Team during the entire operation.

A special thanks is due the participating educators for their time and contribution. Those attending the Center at Monticello the first day were: Mrs. Evora Parker and Principal Dwight Hutto (Parkdale), Mrs. Martha Huey and Principal Malcolm Causey (Warren), Mr. Jim Williams (administrator from Dumas), and Superintendent Curtis Merrell (Monticello).

First day activities centered around SAESC's overall operational procedures, while the second day was devoted primarily to evaluation of Title III pilot projects being conducted in Crossett and Warren.

WORKSHOP -- WITH AREA TEACHERS FEATURED

The Portland faculty and staff has been involved in a series of in-service meetings. The Title III Staff worked with the Portland administration to plan a two day reading workshop for the teachers.

On April 11, Eleanor Stephenson, Reading Specialist, and Sue Hickam, Special Education Coordinator, worked with the Portland faculty and staff for the first session of the two day program. Mrs. Stephenson outlined six elements necessary for a successful reading program and showed ways these elements could be implemented in the classroom. Mrs. Hickam worked with the teachers concerning ways they could identify and work with slow learners in the regular classroom.

Four teachers from Crossett presented the program on the second day of the workshop with Mrs. Stephenson serving as coordinator of the program. The program centered around the Macmillan basic reading series which is Portland's adopted reading text.

Mrs. Austin White, a third year teacher in the Crossett system, showed the teachers how to develop and carry out a good lesson plan for reading, utilizing the Macmillan basic series.

Mrs. Pillar, a second year teacher, worked with the staff on ways they could best utilize aids in their reading program.

Mrs. Carlana Gill, a first year teacher, outlines readiness for reading, how to create an atmosphere most conducive to reading and how to motivate children to want to read.

Mrs. Mildred Pilgram, a remedial reading teacher in the Crossett system, presented a program on identification of remedial readers and how to help remedial reading students.

A question and answer session was the concluding part in the two day program. A display of reading materials was also set up on both of the days and teachers could browse and get ideas on teaching aids they would like to have for use in their own classroom. Each participant also received several handouts on the material presented in the course of the two day workshop.

ANOTHER NONGRADED PROGRAM

Monticello's grades 1 - 4 will begin nongraded approaches next year. Dr. Curtis Merrell, Superintendent, has indicated that eventual plans are to nongrade 1 - 12. Weekly workshops have been conducted this semester to familiarize the teachers and administrators with nongraded programs and techniques.

The acceptance and adoption of the nongraded techniques has been extensive in Southeast Arkansas. Much credit should be given the nongraded concepts started at Crossett with Title III assisting. At least one-half of thirty-five Region IX schools have indicated they are implementating now or starting next year nongraded programs of some nature.

CROSSETT PROJECT

An analysis of covariance on last year's Crossett scores has indicated that the Open Court Correlated Language Arts Program was superior to both the Macmillan and SRA Reading Programs with heterogenously grouped children. The adjusted mean grade-level equivalent for the Open Court cross section class was 3.1 as measured by the California Reading Achievement Test. The adjusted mean for SRA was 1.7 and for Macmillan the adjusted mean was 1.3 at the end of the first year. This means that if the three groups had been equal on the pre-test scores, this would be the differential between the post-test scores. The mean pre-test scores and mean post-test scores were as follows:

	Harrison-Stroud Pre-test mean	California Post-test mean	Adjusted California Post-test mean
Macmillan	227.13	61.04	58.47
SRA	213.19	61.67	60.77
Open Court	173.43	66.65	69.75
Grand mean	204.14		

The adjusted raw score mean on the post-test are the means that the groups would have had if all three groups had had a mean equal to the grand mean of 204.14 on the pre-test.

The adjusted means were compared using Schaeffe's technique for multiple comparisons for means. This test is a very rigid test and required that the level required for significance be doubled before a statistic can be significant. The F required for significance in this case was 6.28 after doubling the .05 value. The following F ratios were obtained:

Macmillan vs. SRA	F = 0.36
Macmillan vs. Open Court	F = 13.46
SRA vs. Open Court	F = 9.00

Open Court was significantly higher beyond the .01 level than Macmillan and significantly higher than SRA beyond the .05 level.

The results of analysis of covariance on homogeneously group classes was inconclusive because the basic assumption of the Analysis of Covariance, which is homogeneity of regression coefficients, was violated.

The results appear to indicate that schools which are not ability grouping first grade students could get better results using the Open Court Program. It is hoped that this year's results will provide more conclusive results.

There has been a question as to the effectiveness of the Open Court Program with slow learners. Here are some of the scores of the slow learners on the pre and post-tests. Consider that the average score on the pre-test is approximately 200.

Pre-test	Post-test grade equivalent at 1.9
167	2.9
141	2.2
131	2.0
113	1.8
103	1.2
93	1.7
52	1.9
41	1.2
33	1.9
21	1.2
4	1.6

SAESC ADVISORY COUNCIL VISITED

Mr. Fay Bohannon, State Title III Director, paid a visit to the SAESC Title III Advisory Council Meeting, Wednesday, March 15. Discussions, centering around progress and phase-out procedures of the current project, were the main points of concentration.

It was expressed that the current SAESC Title III sponsored Pilot Projects would be continued by the respective schools where they are being conducted. Some means of retaining certain types of services, currently afforded through the SAESC Project, were discussed. No final conclusions were reached. It was pointed out that some of the services now being afforded are going to be provided by school districts on an individual basis.

The meeting, originally scheduled to be at UAM (it was held at the new Monticello High School) was attended by only thirteen members of the Advisory Council. An Advisory Council Meeting will meet during the latter part of April or early in May. Tentatively 2 p.m., Monday, April 24, will be the time. Further information will be forthcoming. Save that time and date if possible.

CONCERNING INNOVATION
(from "Your Olds Observer", Vol. II, No. II, 1969)

Some Fresh Ideas on Problem Solving

All too often, when people try to solve a problem, they get hung up on one approach and thus fail to make full use of available information. When you have a problem, International Science and Technology suggests this formula: (1) Run over the elements of the problem in rapid succession several times until a pattern emerges that encompasses all the elements simultaneously. (2) Suspend judgment. This keeps you from getting hung up on the first interpretation that comes to mind. (3) Stay loose

mentally, vary the temporal and spatial arrangements of the problem components. (4) Produce multiple solutions. If you are not driven to find the one perfect solution, you are free to look at the problem from all sides. (5) If you have been expressing the problem in non-verbal terms, try expressing it in words, and vice versa.

VERSATILE!

A recent study of the lowly paper clip reveals that it serves a multitude of purposes. The survey, which traced the "careers" of 100,000 paper clips, found that: only 20,000 were actually used as paper clips, 14,163 were dismantled during phone calls, 3,196 for pipe cleaners, 5,008 as nail cleaners, 5,434 as toothpicks, 17,200 as improvised suspender hooks.

LONG SHOT!

If you've ever dreamed of becoming rich and famous as a writer, it might be well for you to know what the odds are for success. A recent survey of writers shows that only 50% received more than $1,000 in 1968 from their efforts. About 75% confessed that income from writing was far from enough to live on.

SAESC TITLE III ON THE MOVE

Southeast Arkansas Educational Service Center was literally "on the move" from March 4-11. The Staff moved all materials, equipment, and supplies from the old offices in the Monticello High School to the refurbished former Home Economics Building at the old Monticello High School site. Much of the refurbishing was done by the SAESC Staff. Aside from a little sweat and some extra long hours and weekends being spent, it was a "fun" deal for the Staff.

You can visit the Center at a ground floor location now -- so stop by and see us. We're still on the old Monticello High School campus.

WORKSHOP BEING PLANNED

A great deal of planning and effort has gone into organizing the workshop on Children with Learning Disabilities. Costs are going to exceed what Title III can put into the workshop. Because of the interest and concern of many administrators and teachers about these children, we've proceeded with setting up the workshop. We request that each administrator make a special effort to come and encourage teachers to come.

Dr. Edward Frierson, from the Child Learning Center in Nashville, is one of the most dynamic persons in this area of education. We feel certain he and Miss Jean Lukens, from the Child Study Center in Little Rock, will provide assistance to each workshop participant that will make a day well spent for your school.

PLEASE POST THE FOLLOWING PAGES!

ATTENTION TEACHERS!!

WORKSHOP

HELPING CHILDREN WITH LEARNING DISABILITIES IN YOUR CLASSROOM!!

May 5 UAM Ballroom Monticello

As a classroom teacher, have you ever had a child that seemed real bright but could not succeed with some academic task such as reading or math? Have you ever made the statement, "If Johnny would just try, he could do his work!"? Have you ever wondered why Susie would not stay in her seat? Have you ever thought that Tom was just plain mean when he aggravated all the children in the room?

There may be a logical explanation for all the aforementioned characteristics of some children. Dr. Edward Frierson, of Nashville, Tennessee, and Miss Jean Lukens, of Little Rock, will conduct an all day workshop, May 5, at UAM, concerning children with learning disabilities. They will discuss identification of children with learning disabilities and ways you can help this child in YOUR classroom.

8:30 - 9:00		Registration
9:00 - 9:30		Welcome - Title III
9:30 - 10:45		Differences that make a difference in learning! (Understanding specific disabilities in Children) - Dr. Edward Frierson
10:45 - 11:00		Break
11:00 - 12:00		Differences that make a difference in learners! (Identifying specific disabilities in the classroom) - Miss Jean Lukens
12:00 - 1:00		Lunch
1:00 - 2:30		Differences that make a difference in teaching! (Practical tips for more effective Classrooms)
	1:00 - 1:45	Group A - Primary - Dr. Frierson
		Group B - Upper Elementary - Miss Lukens
	1:45 - 2:30	Group A - Primary - Miss Lukens
		Group B - Upper Elementary - Dr. Frierson
2:30		Evaluation - Title III

All teachers, principals, superintendents, parents and interested persons are urged to attend. A $2.00 registration fee will be charged.

PLEASE POST

POST ME

The following events may be of interest to you:

****

Southeast Arkansas Schoolmasters' Fish Fry at Lake Village on Monday, April 17.

****

Special Education Workshop for Region IX Special Education Leaders -- at Title III Center (SAESC) in Monticello on Wednesday, April 19. (Old High School Campus).

****

Title I Planning Meeting at UAM on Thursday, April 20, 9 a.m.

****

Title I Coordinators Meeting at State College of Arkansas, Conway on April 24-25.

****

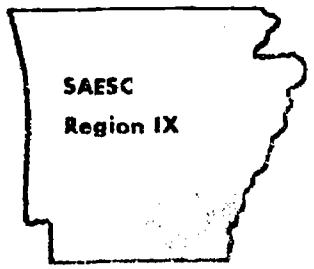
First Annual Arkansas Audiovisual Conference at Ramada Inn, Russellville, April 26-27.

****

Workshop -- "Helping Children with Learning Disabilities" -- UAM Ballroom Friday, May 5, 8:30 a.m. Registration.

****

SAESC Advisory Council Meeting Monday, April 24, 2:30 p.m. at the new Monticello High School (Home Economics Room).



Southeast Arkansas
Educational Service Center
Region IX
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Monticello, Arkansas 71655

NEWSLETTER

Vol. 1 No. 1 ESEA Title III Sept.-Oct., 1971

SAESC IN ACTION

The Southeast Arkansas Education Service Center (SAESC) began the second year of operation on the current project. The SAESC Title III Program is designed to promote innovative educational projects and provide assistance to the thirty-five school districts in eight counties of Southeast Arkansas. These counties are Ashley, Bradley, Calhoun, Chicot, Cleveland, Desha, Drew, and Lincoln. The eight counties comprise Region IX under the State Plan for Title III.

The SAESC will again operate with only four certified staff members and two secretaries. The staff members and their positions are as follows:

Director: George J. Parker will serve as the new director of the SAESC. Mr. Parker has just completed his Ed. D. requirements at the University of Arkansas. He has had six years experience in the public schools in St. Louis County, Missouri and seven years of college teaching, coaching, and administrative experience in Arkansas.

Research and Evaluation Specialist: Mr. Stan Williams, who will receive his Doctorate in Education Administration for the University of Arkansas, has assumed this position. Mr. Williams is a former Arkansas high school principal and math teacher. He taught in the University of Mississippi this past summer and served as graduate assistant in research and statistics at the University of Arkansas for the past two years.

Special Education Coordinator: Mrs. Sue Hickam, a graduate of University of Arkansas at Monticello and a recipient of a Masters Degree in Special Education from State College of Arkansas, is serving for the second year in this position. Mrs. Hickam has several years experience in Special Education and has provided extensive services during the current and past year to assist Region IX schools in the area of Special Education.

Reading Specialist: Mrs. Eleanor Stephenson, also a UAM graduate and second year SAESC employee, holds a Masters Degree, with a major in reading, from the University of Mississippi. Mrs. Stephenson has taught in the Crossett, Drew Central and Fountain Hill school districts.

THERE'S SOMETHING IN HERE FOR YOU - READ ALL OF ME!

Secretaries: Mrs. Juanita Rogers and Mrs. Kathleen Rash return as Title III secretaries. Mrs. Rogers is in her sixth year and Mrs. Rash her fifth year with Title III.

In addition to the many and varied services available from the staff, the SAESC sponsors four Pilot Projects in Region IX. You are encouraged to contact any of the Staff and/or visit any of these projects. The number to call staff members is 367-6864. A brief description of each pilot project and the person to contact for visitation arrangements follows:

Warren Pilot Project
(Contact Mr. Malcolm Causey 226-2351)

The Warren Science Project enters its second year with some slight changes from last year. This year the same teacher will teach experimental and control groups. This has been done to eliminate the teacher variable.

As last year, the experimental groups will be taught science with the aid of a fully equipped laboratory. The control groups will be taught the same science course without the laboratory or the equipment. There are two experimental groups for each grade level and two control groups for each grade level. There is one high and one low group in each of the categories for each grade level. The sixth graders were grouped into high and low on the basis of the results of the Spring testing with the Metropolitan Science Test. They were then assigned to control and experimental groups on the basis of their scores. The fifth grade students were assigned to high and low groups on the basis of their Iowa Test of Educational Development scores. They were then assigned to the groups by the principal. Students were matched as nearly as possible.

The students were pre-tested this fall with the Metropolitan Science Test Form Am. They will be tested again in the Spring with Form Cm of the test. It was interesting to note that the students in the project has excellent retention of the knowledge they had gained the previous year. The sixth grade students who were in the project last year had gained approximately 2 months on grade level during the summer. This included both experiment and control groups. The students not in the project had lost approximately 1 1/2 months over the summer. The gain over the summer is best explained by the fact that when the students were tested in the spring they were tired and had just completed another testing program. This would cause the scores in the spring to be lower than the students actual true score. It was interesting to note that the low achievers in the experimental group had a mean gain of 3 months over the summer. Only 29% of the low experimental groups had lost ground over the summer. While 55% of the low control group exhibited losses over the summer. Forty-eight percent of the high control and thirty-seven percent of the high experimental groups had losses over the summer months.

Last September the average fifth grade had a grade equivalent of 4.3. Approximately 8 months behind grade level. This September, as beginning sixth graders, their average grade level was 5.7. Only approximately 4 months

behind grade level. This means that the students gained approximately 1.4 years last year on the average.

The present fourth grade had a mean grade equivalent of 4.3 on the fall pre-test, this means that they are very similar to last years class. It is hoped that this group will exhibit even greater gains than the previous group because the teachers have had the equipment from the start of the year, they have had the advantage of a years experience with the equipment and the teacher variable is being controlled this year.

Crossett Pilot Project I
(Contact Mr. Jim Bob McCormick 364-4621)

The Crossett Special Education Project was considered quite a success in 1970-71 by the Special Education Office of the State Department, the SAESC staff, the on-site evaluators, and the Crossett Special Education Staff.

The 1971-72 project will be much the same as last year but with some modifications in the instructional program that should strengthen and provide an even better project.

Four elementary EMR classes and one middle school EMR class will participate in the project. Each class will have access to the work center one whole day per week. The children in these classes are educable and will be learning to read, write, do simple computations, and communicate orally. Emphasis will be placed on correlating these skills with training necessary for these students to become independent members of society in adulthood. The composition of the classes dictates that instruction be structured to meet individual needs. The special education teachers will write behavioral type objectives to meet the needs of each student.

Specific behavioral objectives will be written to develop academic and social skills by involving the students in real-life situations. Specific skills will be developed to (a) improve the child's self-concept, (b) enable the child to interact successfully with others, (c) help the child obtain and manage, with limited supervision, materials and money, and (d) enable the child to progress academically according to his mental expectancy.

A control group will not be used. It would be impractical to exclude any class for a control group. The evaluative process will be a checklist procedure based on behaviorally stated objectives which are specified for individual students. The Wide Range Achievement Test will be administered near the end of the school year to each student in the program. The scores on these tests will be compared with the scores obtained on the Wide Range Achievement Test given in May, 1971.

The Elementary Principals, Middle School Principal, Special Education Supervisor and teachers, the Special Education Coordinator from the Title III Center, and Special Education Personnel from the State Department of Education will participate in evaluation.

Crossett Pilot Project II
(Contact Mrs. Gussie Price 364-4621)

The Crossett First Grade Reading Program has undergone some changes for the current school year. For the first time Crossett has gone into a non-graded primary. The Title III project involves approximately 270 first year students and twelve teachers. One school, Price Elementary, has been designated as the control school and the three first year teachers are using the Macmillan Basic Reading Program. The other three schools, Anderson, Hastings, and Calhoun, have been designated as the experimental schools. They are using the Open Court Correlated Language Arts Program as their basic reading program. This involves nine teachers. A pre-school training workshop was conducted by the Open Court Company for the teachers involved in teaching Open Court. We have been unable to secure a consultant from Macmillan Company to date.

At the beginning of the school year, the students were administered the Harrison-Stroud Reading Readiness Profile and randomly assigned to classes. All students began instruction on the Junior Primary level but many have advanced into Phase I.

The teachers are enthusiastic about the non-graded primary, and the reading programs they are involved with. The students have gotten off to a good start, and an observer can readily see that the enthusiasm of the teacher is being transferred to the students.

Parkdale Pilot Project
(Contact Mr. Dwight Hutto 473-2690)

The Parkdale Reading Project is following the same format as the 1970-71 project. Two teachers are utilizing the Open Court Correlated Language Arts Program and two teachers are using the Macmillan Basic Reading Program. Approximately 85 students are involved in the project with one-half of these receiving instruction in Macmillan and one-half receiving instruction in Open Court. The students are under the same program they were using in 1970-71 but are on more advanced levels.

At the beginning of the current school year the second, third, and fourth grade students were administered the SRA Reading Achievement Test, Form C. An alternate form will be given at the close of the school year. First grade students were given the Harrison-Stroud Reading Readiness Profile. The results of these two tests were used in helping to divide the students into the two programs.

We are expecting a great deal of gain in the Parkdale project at the end of the year.

WORKSHOPS

Crossett: Crossett personnel and staff involved in the Special Education Program met with the SAESC staff and consultant, Dr. Joseph May for the purpose of developing new and improved techniques for increasing student achievement.

The workshop, held Thursday August 19, focused upon the writing of Behavioral Objectives. Dr. May conducted the morning session for the fifteen participants by explaining and demonstrating through utilization of Evaluative Programs for Innovative Curriculums (EPIC) materials. The afternoon session involved the actual writing of specific objectives for students in the Special Education Program. SAESC staff members assisted Dr. May with this position of the workshop. The teachers were developing objectives for their individual students as the workshop concluded.

Warren: "Individualized instruction" was the theme of a pre-school workshop conducted for the entire Warren teaching and administrative staff. Approximately one hundred and twenty-five persons were in attendance for the keynote address presented by Dr. Lawrence Roberts. SAESC helped sponsor and coordinate the workshop which included follow-up sessions to Dr. Roberts' speech. These sessions, held in the afternoon of August 26 following the morning address, were conducted by Dr. Roberts, Mrs. Nancy Crawford from the El Dorado School System, Mrs. Vernice Hubbard of the State Department, and Mr. William Haven of the State Department. Activities and preparations on the 27th involved actual classroom work by the teachers as they utilized the previous day's experiences to prepare for the coming years SAESC Title III staff members. Mr. George Parker and Mr. Stan Williams were present for the Warren Workshop.

Crossett and Parkdale: A Pre-school Workshop, for the teachers involved with the non-graded reading program at Crossett and Parkdale, was conducted at Crossett Friday, August 20. The forty-seven persons in attendance were given inspiring demonstrations in the use of Open Court materials by Miss Marilyn Waters. Miss Waters is a representative from the Open Court Publishing Company. Morning and afternoon demonstrations were followed by group sessions in which the teachers actually practiced and aided each other in the use of the materials. SAESC Title III staff members assisted in the organizing and sponsoring of the workshop.

Science Workshop: Mr. Wayne Devine, Assistant Professor from U AM, is serving as a special consultant for the teachers from Warren who are involved with the Warren Science Project. Mr. Devine conducted a pre-school workshop and is meeting every other week for two hours with teachers in continuous-consultant role. Mr. Causey, Principal at Warren Westside Elementary, speaks very favorably of the progress and interest which has been shown in science.

Behavioral Objective Workshop: Dr. Joseph May, Assistant Professor from Southwest Louisiana University conducted a workshop for the Crossett Special

Education teachers at Crossett on Thursday, August 19, 1971. "Behavioral Objectives" was the theme of the workshop. Morning and afternoon lectures were followed by special individual sessions, with the Title III personnel assisting in instruction.

OTHER SAESC ACTIVITIES

Mr. Parker and Mr. Williams have been busily engaged in orienting themselves to Region IX schools and personnel and the Title III activities. They attempted to visit every superintendent in the 35 schools by September 10. In some cases they missed but second and third efforts have proven fruitful. Through these acquaintances future benefits have been made available to the schools. Twelve exact appointments for reading and/or special education assistance were made and other less specific assistance was made available. Communication channels have been opened, and the usefulness of the center depends upon how well channels are utilized.

Special Education Increases: The number of Special Education classes in Southeast Arkansas increased for the 1971-72 school year.

Crossett has increased its Special Education Program from six classes to eight classes. They now have four elementary EMR classes, one middle school EMR class, one junior high EMR class, one senior high work study class and one elementary learning disabilities class.

Warren expanded their Special Education Program to the junior high level. Their present program consists of one primary EMR class, one elementary EMR class, and one junior high EMR class.

Eudora added an elementary EMR class this year. They have had a primary EMR class for several years. Star City started a Special Education class at semester of the last school year, and is continuing this year. Dermott is starting its second year with an elementary EMR class.

Fountain Hill, Thornton, and Dumas have established elementary EMR classes for this school year. Mrs. Sue Hickam, Title III Special Education Coordinator, has assisted these schools with testing and organization of these classes.

Many schools in Southeast Arkansas are recognizing the need for Special Education Programs and are endeavoring to meet the needs in their communities. It is hoped that other schools will establish Special Education classes in the near future.

Added Emphasis on Reading: Mrs. Eleanor Stephenson, Title III Reading Specialist, has been busy working in several of the area schools since the beginning of the school year. She has worked in Crossett, Parkdale, Fountain Hill, Wilmot, Monticello, Warren and Dumas. The major portion of Mrs. Stephenson's time has been consumed in the two reading pilot projects in Crossett and Parkdale. Administering readiness tests, setting up classes, distributing materials and supplies and conducting in-service training have been some of the activities that have evolved out of the two projects.

Mrs. Stephenson secured a consultant from the Open Court Publishing Company who conducted a full day's training workshop for Crossett, Parkdale, and Fountain Hill teachers. A follow-up is planned for mid-year with an invitation to attend extended to any school using Open Court materials or planning to do so in the future. Plans are also being made for a Macmillan training workshop.

Assistance has been given by Mrs. Stephenson to Wilmot who is currently setting up a remedial reading program for Jr. High and High School students.

Dumas is becoming involved with the Open Court Correlated Language Arts Program. The Title III Center furnished Dumas with enough materials for a class of twenty-five students. These students are the more accelerated, and the plans are to see if the group comes out higher on reading achievement scores than equally high groups using other programs.

Warren is also using an Open Court Reading Program in one of the special education classes.

TITLE III SAESC EXECUTIVE COMMITTEE MEETING

Thursday, September 9 this committee had their initial meeting for the current year. Discussions were held concerning the pilot projects now being conducted and the possibilities for new ones. The committee voted approval of Monticello's submitting the proposal for Region IX. Efforts are currently underway by Dr. Merrell, Monticello Superintendent, and Mr. Parker, Region IX Title III Director, to ascertain the desires of the districts for a future proposal. If your district has a special area which you feel could benefit from a Pilot Project they (Dr. Merrell or Mr. Parker) would welcome your ideas. Your ideas and opinions must be submitted soon, however.

FUTURE OF TITLE III FOR REGION IX

The Title III SAESC Executive Committee voted, Thursday September 9, 1971 to direct efforts to maintain a regional center at Monticello. Serving the eight-county region and utilizing UAM resources and personnel seem to make Monticello the most practical and appropriate location for the regional center concept. In addition, certain facilities, equipment, and materials are already in this location.

It could be that other school districts in the region are interested in a different set up. If so, we would appreciate learning about this. Should you agree that the present Monticello location is the most logical, we hope to begin proceedings to develop a project which could best serve the entire region. The following have been suggested as possibilities for pilot projects and areas of concentration for a new Title III Project:

a. Supervision (for specific areas of study, somewhat on the Master-Teacher basis)
b. Reading Innovations
c. Special Education Assistance and Psychological Testing and/or Cooperative Special Education
d. Community Schools (Citizen Utilization of Facilities)
e. Individualized Instruction in Math
f. Data Processing
g. Multi-Media Techniques for Learning
h. Improved Study Techniques
i. Health and Physical Fitness

The SAESC currently sponsors four pilot projects (2 at Crossett, 1 at Parkdale, and 1 at Warren) and provides consultant service in the area of special education, reading, science, and math. We feel there are certain areas in which many of the schools in this region have a need for, and would take advantage of, new ideas and assistance.

The above information was responded to by twenty-eight (approximately 80%) of the area superintendents from Region IX. All voted that Monticello was the most logical location and that the Regional Center concept should be maintained. Dr. Curtis Merrell is making preparations to submit the new proposal.

By putting together the best ideas from the people in the eight county region, we hope the best in Title III Services is yet to come.

REPORT ON MEETINGS

Conference Planning Meeting: Mr. Parker met with Title III Project Directors, Mr. Charles Watson, Title III Supervisor, and Mrs. Sara Murphy, Director of Dissemination to discuss plans for the Title III Conference to be held at Hot Springs October 18-19. Conference highlights will center around "Accountability". Featured speakers will include:

Mrs. Ruby Martin, a Fellow with the Washington Research Project
Dr. Vita Perrone, Dean of the School of Education, University of North Dakota
Dr. Edward Frierson, Director of the Nashville Learning Center, Nashville, Tennessee

Innovations in education will be on display as each of the Title III Centers in Arkansas will give three one hour presentations depicting a special part of

their project. SAESC will feature the non-graded reading program being conducted in the Crossett Elementary Schools.

It should be a stimulating conference! Dates Monday and Tuesday, October 18-19 at Hot Springs.

MINI-GRANTS FOR TEACHERS

Teachers with innovative ideas which they would like to develop within their own classrooms are eligible to receive mini-grants of up to $1,000 from the State Title III Office. The new mini-grant program was established by the State Title III Advisory Council because the Council was convinced that classroom practitioners, who ordinarily have to carry out but get little input into the larger innovative programs developed by others, might have many common sense ideas for improvement. Formal proposals following the present Title III requirements will be necessary for the mini-grants as for regular Title III projects. Teachers interested in submitting applications should write to the State Title III Office to secure proposal forms.

The Council also set other priorities for Title III proposals which included: reading, special education, guidance and counseling, vocational education, consolidation of services, drug education, environmental education, curriculum for low achievers, the gifted, health education, cultural differences, and individualized learning.

HELP YOURSELF AND YOUR STUDENTS!

SAESC established a library, located on the third floor of the Monticello High School, for all of the Region IX Schools to use. It contains several volumes, at various levels, in the following areas:

Literature	College English	Math
Speech	General Education	Social Studies
Reading	Science	A-V materials (of limited nature)

If you desire to use any of these materials feel welcome to come in and check them out, or call and we will try to bring all of the materials from any one area to you. They can be checked out for one to two months at a time.

TAKE ADVANTAGE OF THESE MATERIALS - THEY ARE YOURS TO USE!
(Oh, yes, there are some current and valuable books in the area of administration, too.)

IMPORTANT DATES

October 11	Basketball Rules Meetings Begin
October 11-12	Arkansas School Council Conference
October 15	Basketball Season Starts for Non-football schools
October 14-15	Conference of Reading - Conway (SCA)
October 16	Football Game somewhere in Arkansas

2nd Wednesday each Month - Southeast Arkansas School Study Council
UAM - 2 p.m.

3rd Monday each Month - Southeast Arkansas Schoolmasters
UAM Cafeteria 6 p.m.

October 18-19	Hot Springs Title III Projects on display. Conference on "Accountability"

PLEASE PLACE COPIES OF THIS WHERE YOUR PERSONNEL CAN READ IT!

APPENDIX K

FINAL YEAR EVALUATION

NARRATIVE

I. Objectives

Crossett No. 1

A. & B. Students in the experimental schools receiving instruction with the Open Court Correlated Language Arts Program will achieve at a higher level than students from the control school using the Macmillan Basic Reading Program as indicated by the California Reading Test (form A).

Teachers in both programs were trained in how to use their program properly. Each teacher had equal materials to work with and equal in-service training.

Students in the experimental schools will achieve on or above 1.9 reading level at the end of the school year 1971-72 with the exclusion of children with learning disabilities.

Children with possible learning disabilities were given a WISC and several other tests by the school counselor. The only children excluded from the study were those who tested out as EMR's.

Students in the experimental schools will have a better attitude toward reading than those in the control school.

An attitude inventory was administered to all first year students in the program. Results of the inventory revealed a better attitude toward school and reading by students in the experimental classes.

The non-graded program will be successful in individualizing instruction as measured by increased variations in student achievement scores.

Student achievement scores for the end of the second year of operation were significantly higher than scores for first year students at the end of the first year of operation. Specific results can be found in the evaluation section.

C. All project objectives were fully met in the Crossett First grade reading project. The following narrative includes additional analysis of some first year data followed by a description of the findings of the Crossett Evaluation. Additional first year evaluation were conducted during the second year and are presented first.

Additional Evaluation of First Year. Many factors about the first year research design were undesirable. For example, the use of t-tests for multiple comparisons is not statistically sound. The t-test is a strong test of significant differences when comparing two groups but for comparisons of three groups the basic assumption of independence of comparisons is violated. This was the case in the comparison of the three sets of materials in the Crossett Project's first year. Based upon this, an evaluation was made comparing the results by the analysis of covariance.

Due to the assignment of materials only the results of the Control school were suitable for the analysis of covariance. The pre-test scores were to be used as the covariates.

For the homogeneously grouped classes the regression coefficients were not homogeneous. As a result no analysis was possible.

Three classes from the control school were selected for analysis. These provided a basis for comparing the three programs - Open Court, Macmillan, and SRA. The three teachers were of approximately equal ability and the three classes were heterogeneously grouped.

Table 1 presents the pre-test means, raw score post-test means, adjusted raw score post-test means, and adjusted grade equivalent means. Initially the Macmillan class was highest with a mean of 227.35. SRA was second with a mean of 213.19. and Open Court was lowest with a mean of 173.48. The unadjusted post-test raw score means showed Open Court highest with a mean of 66.65. SRA second with a mean of 61.67 and Macmillan lowest with a mean of 61.04. When these were adjusted the Open Court mean was 69.75 while SRA was 60.77 and Macmillan was 58.74. The adjusted grade equivalent means were:

Open Court	3.1
SRA	1.7
Macmillan	1.3

Comparison of the adjusted means are presented in Table 2. Schaeffe's Multiple Comparisons of means indicated that Open Court was significantly higher than Macmillan beyond the 0.01 level and significantly higher than SRA beyond the 0.05 level. A strength of association test produced an Omega-Square of 0.24, indicating considerable practical significance.

TABLE 1. ANALYSIS OF COVARIANCE ON READING MATERIALS FOR THE FIRST YEAR OF THE CROSSETT READING PROJECT

Program	Pre-Test Means	Raw Score Post-Test Means	Adjusted Raw Score Means	Adjusted Grade Level Means
Macmillan	277.35	61.04	58.74	1.3
SRA	213.19	61.67	61.67	1.7
Open Court	173.48	66.65	69.75	3.1

TABLE 2. SCHAEFFE'S COMPARISONS OF ADJUSTED MEANS

Comparison			F-Ratio Obtained	F-Required at 0.05 *	0.01** Levels
Macmillan	vs.	SRA	0.36	6.28	9.90
Macmillan	vs.	Open Court	13.46**	6.28	9.90
SRA	vs.	Open Court	9.00*	6.28	9.90

Second Year Evaluation. The basic research questions which the Crossett First Grade Reading Project attempted to answer were:

1. Will students in a correlated language arts reading program (Open Court) achieve significantly more than students in a basal reading program (Macmillan)?

2. Will students in a correlated language arts program make greater gains in reading vocabulary than students in a basal reading program?

3. Will students in a correlated language arts program make greater achievement gains in reading comprehension than students in a basal reading program?

4. Will a correlated language arts approach to reading produce significantly higher writing skills in first grade students than a basal reading program?

5. Will the attitude of students in a correlated language arts reading program be significantly higher than those of students in a basal reading program at the end of the first grade?

In an attempt to answer these questions first grade students in the Crossett School System were divided into two groups. The students at the Price Elementary School were chosen to use the basal Macmillan reading program which was already in use in the system. The students in the Anderson, Calhoun and Hastings Elementary Schools used the Open Court Correlated Language Arts Reading Program. Each group was supplied with all the materials recommended by each company.

Students were pre-tested with the Harrison Stroud Reading Readiness Profile in September of each year. They were post-tested in May with the California Reading Achievement Test. Second graders were tested in May of the second year with the California Reading Achievement Test.

Statistical Methods. The second year analysis and the analysis of covariance to adjust out initial inequalities of the groups using the Harrison Stroud pre-test scores as covariates. The independent variable used was a type of reading program and the dependent variable was the post-test scores on the California. This procedure was used for three analyses of reading achievement scores. The analyses of covariance were calculated for total reading grade equivalents, vocabulary grade equivalents and comprehensive grade equivalents.

A fourth analyses involved the comparison of the writing skills of the two groups. Each teacher asked each child to write a story for her. The stories were all written on a Friday morning. Each child was told to write about anything he wished. Teachers did not assist the children in any way. The stories were collected and each child assigned a number. Three independent judges from other schools were selected to score the stories. Two of the judges were first grade teachers and the third a college teacher in early childhood education. Each judge was asked to score each paper and to write the score on a scoring sheet beside the child's assigned number. No marks were made on the paper and each judge had no knowledge of the others' scores.

The judges were asked to give each a score from 1 to 10 keeping in mind four areas - spelling, grammatical correctness, story content and originality.

From these three scores a total score for each child was obtained. These total scores were then compared by means of a t-test

Each child was given an 18 point attitude inventory by a Title III staff member These were anonymous. The total attitude scores of the two groups were compared by a simple t-test

Findings. Three separate data analyses were made of the second year of the project. The first analyses included the analysis of the first grade students' achievement in total reading, vocabulary and comprehension· the comparison of the writing skills of the first grade students· and a comparison of the attitudes of the first grade students. The second analyses involved the comparison of the variance of the scores of first grade students in the non-graded program for 1972 and the variance of the score of the first grade students in the 1971 traditional program to attempt to determine the effectiveness of the individualization of instruction in the non-graded program.

The third analyses was a comparison of the achievement of the second grade students in each of the three first year programs to determine the long range effects of the programs.

First Grade Achievement. The analysis of the reading achievement scores of the first grade students in the second year of the project was made by using the analysis of covariance with the pre-test scores of the students as the covariates

Initially the students in the Macmillan program at Price Elementary had a higher pre-test mean than students in the Open Court Program. Table 3 shows the pre-test means for each of the first grade classes, the post-test means and the adjusted mean for each class on vocabulary, comprehension and total reading. These means are in terms of grade equivalents. Pre-test means are in raw score units. The overall grand mean on the pre-test for all students was 67.04. All classes in the Price School were above the overall mean. This was the Macmillan School.

Table 4 shows the results of the three analyses of covariance on vocabulary, comprehension and total reading grade equivalents on vocabulary. The Open Court classes averaged almost five points lower on the pre-test but averaged slightly more than 3 months higher on the post-test. These means were adjusted by the formula $\bar{X}' = (67.04 - \bar{Y}) .035 + \bar{X}$. Thus the mean for Open Court was adjusted up to 2.54 and the mean for Macmillan down to 2.02 because the Open Court classes were lower than the grand mean and the Macmillan classes mean was much higher than the grand mean. Adjusted means are simply the post-test means that each group would have had if they had had a mean equal to the grand mean on the pre-test. Thus if the Macmillan and Open Court classes had been equal initially the difference in achievement would have been 5 months.

TABLE 3. MEANS AND ADJUSTED MEANS FOR FIRST GRADE TEACHERS

School Teacher	Pre-Test	Post-Test					
		Vocabulary		Comprehension		Total	
		Mean	Adjusted	Mean	Adjusted	Mean	Adjusted
Anderson							
Harper	64.83	2.59	2.68	2.40	2.47	2.51	2.58
McDougald	65.00	3.01	3.09	2.32	2.38	2.68	2.74
Willard	67.72	2.39	2.36	2.69	2.67	2.49	2.47
Calhoun							
Grider	66.00	2.63	2.67	2.12	2.15	2.42	2.45
Rice	65.00	2.58	2.66	1.90	1.96	2.33	2.39
Robinson	62.78	2.39	2.56	2.01	2.14	2.28	2.41
Hastings							
Harper	65.33	2.29	2.36	2.09	2.14	2.15	2.20
McGehee	64.30	2.37	2.48	1.97	2.05	2.20	2.28
Murphy	67.60	2.18	2.16	2.20	2.18	2.17	2.15
Price							
Gill	71.31	2.28	2.11	2.17	2.04	2.18	2.05
Grigsby	72.27	2.16	1.95	2.22	2.06	2.12	1.96
Mitchell	68.27	2.04	1.99	1.66	1.62	1.91	1.87

TABLE 4. ANALYSIS OF COVARIANCE RESULTS ON READING ACHIEVEMENT

	Harrison Stroud Pre-Test	California Post-Test Mean	California Post-Test Adjusted Mean	d.f.	F-Ratio
Vocabulary					
Open Court	65.74	2.49	2.54	1/242	F= 36.48
Macmillan	70.59	2.16	2.02		
Comprehension					
Open Court	65.74	2.17	2.21	1/242	F= 8.61
Macmillan	70.59	2.01	1.90		
Total Reading					
Open Court	65.74	2.36	2.40	1/242	F= 17.33
Macmillan	70.59	2.06	1.95		

Values required for Significance $F_{.05}= 3.89$

$F_{.01}= 6.76$

The F-ratio obtained for the comparison was 36.48. This ratio is very significant because the F required for significance at this 1% level is only 6.76.

The analysis of covariance on the comprehensive post-test means indicated that there was initially a difference of 1.6 months in achievement. The means were adjusted by the formula $\bar{X}'j = (67.04 - \bar{Y}j)\ .03 + \bar{X}j$. The adjusted means of 2.21 for Open Court and 1.90 for Macmillan indicate that if the groups had been equal initially the difference would have been 3 months in favor of the Open Court Program. This difference produced an F-ratio of 8.61 which was significant beyond the .01 level.

The total reading grade equivalent for Open Court was 2.40 and for Macmillan it was 1.95. These means were adjusted mean indicated that the Open Court classes would have an average of 4⅓ months higher on the post-test than the Macmillan class if the groups had been equal initially. The F-ratio obtained was 17.33 which is significant beyond the 1% level.

First Grade Writing Skills. The total writing skills score for each child was used to compare the writing skills of the students in the Open Court and Macmillan classes. Each student had a possible score of 30. The means for the Open Court and Macmillan classes are presented in Table 5. The Open Court classes had a mean of 12.43 and the Macmillan classes a mean

TABLE 5. WRITING SKILLS AND ATTITUDES - CROSSETT FIRST GRADERS

	Program	Achievement Pre-Test	Post-Test	St. Error of Means	t-Value
Writing Skills	Open Court	65.74	12.43	10.85	1.682
	Macmillan	70.59	11.00		
Attitudes	Open Court	65.74	14.24	0.36	2.82
	Macmillan	70.59	13.41		

Required t-Values: 0.05 = 1.645
0.01 = 2.326

of 11.00. An independent t-test was used to compare the difference in the means. The standard error of the mean was 0.85 The t-value obtained was 1.682 which was significant at the 0.05 level with Open Court having the higher mean score.

An analysis of covariance was not made because the results were obviously significant. An analysis of covariance would have increased considerably the difference in favor of Open Court.

First Grade Attitudes. Table 5 contains the mean attitude scores for the Open Court and Macmillan classes. The mean attitude score on an 18-point attitude scale for Open Court was 14.24 and for Macmillan was 13.41. An independent t-test obtained a t-value 2.82 which was significant beyond the .01 level. The Ope Court students had a significantly better attitude than the Macmillan students on the staff developed attitude inventory.

Ability Grouping vs. Non-graded. The only valid comparison of a non-graded program with a traditional program is the comparison of the variances of the students post-test scores by means of a simple F-ratio. This is because a non-graded program is based upon the principal of individualized instruction and a successful program of individualized instruction will increase the variance of the students scores in the class. The only data available in the project for this comparison were the first grade scores from the first year of operation.

when the program was a traditional program and the post-test grade equivalents from the second year of operation which was the first year of the non-graded program.

Table 6 contains the variance of the scores of the 270 students in the first year and the 245 students in the second year of operation. The variance for the non-graded program was 0.74 and for the traditional program was 0.14. An F-ratio of 5.64 was obtained. This value was significant beyond the 2% level Thus the non-graded program did in effect increase the variance of the scores.

Second Year Achievement. An analysis of the second grade reading achievement scores of the students who were in the SRA, Macmillan and Open Court programs during the first grade was made. During the second year all used the Macmillan Second Grade Program. The statistical analysis by the analysis of covariance indicated no significant difference in either the mean achievement scores at the end of the second or in the mean gain scores for the second grade.

The students who had had the SRA Lift-Off program in the first grade had the highest mean grade level equivalent at the end of the second year and the highest gain in grade level during the second year. These gains were computed from May, 1971 and May, 1972 scores on the California Reading Achievement Test. However, the SRA groups pre-test mean was the highest at 80.51. The Open Court group had the second highest

TABLE 6. COMPARISON OF NON-GRADED AND ABILITY GROUPED FIRST GRADE STUDENTS

Program	Year	Number	Variance	F-Ratio
Non-Graded	1972	245	0.74	F= 5.64
Ability-Grouped	1971	270	0.14	

F required for significance at the 0.10 level = 1.26
0.02 level = 1.39

pre-test mean and the second highest post-test mean. The Macmillan group had the lowest pre-test mean and the second highest mean gain in grade level during the second grade.

Crossett No. 2

An Exemplary Special Education Work Center

A. The composition of the classes dictates that instruction be structured to meet individual needs. The special education teachers will write behavioral type objectives to meet the needs of each student.

Specific behavioral objectives will be written to develop academic and social skills by involving the students in real-life situations. Specific skills will be developed to:

1. improve the child's self-concept.
2. enable the child to interact successfully with others.
3. help the child obtain and manage, with limited supervision, materials and money.
4. enable the child to progress academically according to his mental expectancy.

B Various activities were conducted in the work center to accomplish the goals desired. Some of these activities were as follows: (1) making and hanging curtains, (2) making and hanging wall plaques, (3) embroidering dish towels, (4) making colorful pot holders, (5) making aprons to use while cooking in the center, (6) painting some old furniture, (7) waxing the floors, (8) cleaning the bathroom (9) making the bed, (10) using the washing machine, (11) shopping for groceries,

(12) meal planning, (13) cooking and serving food of various kinds, (14) mowing and sweeping the yard, (15) personal grooming, (16) manners, (17) making handicraft items to sell at the Christmas bazaar, (18) tours to all community facilities, (19) planting a garden, (20) inviting parents and school officials to the center for a special meal or treat.

The successful experiences these EMR children had in the work center proved to be a great motivator for them in their school work. They developed many skills that will enable them to be more independent members of our society as adults They have attained a sense pride and dignity about themselves and their capabilities.

The results of this project may be beneficial to other special education administrators interested in evaluation. Evaluation of a program should be measured primarily in terms of student achievement. Since standardized tests, alone, do not provide adequate data for properly evaluating special education programs, the evaluation procedures used in this project may help others evaluate their special education program more effectively.

Second Year Evaluation. The second year evaluation model was similar to that of the first year with the addition of a summary of the mean grade equivalent gains on the Wide-Range Achievement Test. During the second year more behavioral objectives were written in each skill area. However, there were more students in each class. There were actually fewer

objectives written per child during the second year. During the second year the behavioral objectives were collected and tabulated by the SAESC Special Education Coordinator.

A numerical summary of all primary level students indicated that 197 psychomotor objectives had been written and 158 of them had been achieved for a percentage of 80.2. 313 social objectives were written and 222 had been achieved or 70.9 percentage. 201 arithmetic objectives and 158 achieved for a percentage of 74.0. 223 health objectives out of 290 had been achieved for 76.9 percent and 235 communicative skills objectives had been achieved for a 78.3. A summary of the number of objectives written, achieved, and the primary level is presented in Table 7. Table 8 contains a numerical summary be teacher for the intermediate and junior high levels.

A comparison of the percentages achieved indicates that a higher percentage of objectives were achieved during the second year.

The following shows the two years' percentages for each area for the primary level:

	1971	1972
Psychomotor	69	80.2
Social	60	70.9
Arithmetic	75	74.0
Health	61	76.9
Communicative	57	78.3

This indicates that the teachers improved in their objective writing the second year. They were able to write

TABLE 7. NUMERICAL SUMMARY OF BEHAVIORAL OBJECTIVES WRITTEN FOR CROSSETT SPECIAL EDUCATION STUDENTS - PRIMARY LEVEL

Teacher	Skills Area	Number of Students	Diagnosis of Student Behavior	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved	Percentage of Behavioral Objectives Achieved
A	Psychomotor	18	105	90	64	71.1
	Social	20	116	143	71	49.7
	Arithmetic	20	97	96	58	60.4
	Health	20	178	139	78	56.1
	Communicative	20	222	158	113	71.5
B	Psychomotor	17	192	37	37	100.0
	Social	17	113	33	33	100.0
	Arithmetic	17	75	32	32	100.0
	Health	17	195	44	44	100.0
	Communicative	17	170	20	20	100.0
C	Psychomotor	19	285	18	16	88.9
	Social	19	216	94	88	93.6
	Arithmetic	19	170	35	33	94.3
	Health	19	263	65	65	100.0
	Communicative	19	332	60	59	98.3
D	Psychomotor	18	146	52	41	78.8
	Social	18	116	43	30	70.0
	Arithmetic	18	88	38	35	92.1
	Health	18	102	42	36	85.7
	Communicative	18	178	62	43	69.4

TABLE 8. NUMERICAL SUMMARY OF BEHAVIORAL OBJECTIVES WRITTEN FOR CROSSETT SPECIAL EDUCATION STUDENTS - INTERMEDIATE LEVEL AND JUNIOR HIGH LEVEL

Teacher	Skills Area	Number of Students	Diagnosis of Student Behavior	Number of Behavioral Objectives Written	Number of Behavioral Objectives Achieved	Percentage of Behavioral Objectives Achieved
			Intermediate Level			
D	Social	2	20	10	6	60.0
	Arithmetic	2	9	5	5	100.0
	Health & Safety	2	5	4	3	75.0
	Communicative	2	15	9	8	88.9
E	Social	8	56	21	11	52.4
	Arithmetic	8	22	30	22	73.3
	Health & Safety	8	8	0	0	0.0
	Communicative	8	57	26	19	73.0
			Junior High Level			
E	Social	3	14	7	7	100.0
	Home & Community	3	16	9	9	100.0
	Health	3	18	6	6	100.0
	Safety	3	2	0	0	0.0
	Cultural Heritage & Current Events	3	16	1	1	100.0
	Vocational	3	9	5	5	100.0
	Communicative	3	27	6	6	100.0
	Number Concepts	3	49	11	11	100.0

objectives that were more realistic for the children.

A summary of pre-test and post-test means for each class and grade level gains on the Wide Range Achievement Test are presented in Table 9. The grade level equivalents indicate strong gains in the arithmetic achievement. Since no previous gains for these classes or gains by other special education classes were available, no comparison can be made. Therefore, no conclusions can be made based upon the results presented.

Principals' Comments:

(1) The Center provides an environment and atmosphere that is conducive to learning the skills most needed by the educable mentally retarded child.

(2) Creative activities are provided that enrich the background of each child.

(3) The Center provided the space for activities that permit the child to participate in learning situations in which he can experience the success needed to improve his self-concept.

(4) The Center has provided learning experiences for individual special education students from each of the four elementary schools that could not have been adequately met in their regular classroom.

(5) Space was limited but proved to be a very valuable learning center.

(6) Experiences such as painting, cooking, sewing and gardening, to mention only a few, were provided that would have been impossible to provide in four separate locations.

(7) The program centered around psychomotor activities but additional activities were provided to assist each student to become a better home, family and community worker.

(8) This training has been effective for each individual student since a variety of activities were

TABLE 9. SUMMARY OF CROSSETT SPECIAL EDUCATION CLASSES' GRADE EQUIVALENT MEAN SCORES ON THE WIDE RANGE ACHIEVEMENT TEST

Teacher	Reading			Spelling			Arithmetic		
	Sept.	May	Gain	Sept.	May	Gain	Sept.	May	Gain
A	1.20	1.60	0.40	1.32	1.60	0.28	1.40	2.20	0.80
B	1.40	1.62	0.22	1.10	1.53	0.43	1.20	2.10	0.90
C	1.00	1.40	0.40	1.00	1.30	0.28	0.90	1.60	0.70
D	1.20	1.60	0.40	1.20	1.60	0.40	1.40	2.40	1.00
E	2.30	2.35	0.05	2.20	2.50	0.30	2.60	3.00	0.40

provided that involved real-life experiences.

(9) Supervision is considered excellent as a full-time teacher aide and a special education supervisor were available to assist the regular teacher and aide.

(10) Student response to the Center is excellent as each individual student eagerly awaited his visit to the Center each week.

Comments: Roy Wood, Area Supervisor
Special Education
Department of Education

It is my feeling that the Crossett Special Education Work Center has bridged the gap to and made possible the development of sequence and continuity in the instructional program. As a result of this activity, the curriculum has been geared to home living skills and is relevant to the children's needs.

The behavioral checklists the teachers have developed have given direction to the program and, consequently, the teachers' planning, organizing and teaching techniques have been upgraded significantly. The teachers have progressed to the point to where they can write measurable objectives for each individual student.

The Christmas Program and bazaar allowed the students to earn and manage their money. This activity could not have been so successful had the Center not been available.

It is my opinion that the Crossett Center can and should function as a model in that the teachers have developed a sound evaluation scheme in light of their objectives. I feel privileged to have had the opportunity to learn from the rich

experiences the Center has produced.

SAESC Staff Comments: The Crossett special education teachers are an active group that are putting forth every effort to provide the best services possible for the retarded children in their school district. The work center project has provided the opportunity for the teachers to meet together to plan, organize, share, and evaluate their work.

The teachers developed behavioral checklists that are very practical and helpful in planning individual work. They use the checklists as a guide for writing objectives for each student. The quality objectives written this year were much better than last year. Administering the checklist and writing objectives has made the teachers more aware of what they are really doing for each individual in their class.

The experiences the children have had in the work center are numerous. Concepts that were taught in the classroom were made real in the center. A retarded child will retain what is learned in a concrete situation much better than what is taught in abstract form. Activities, such as the Christmas Program and bazaar, allowed the children to perform before a large group and to sell what they had made with their own hands thereby improving their self-concept.

The work center involved 79 students the first year, 89 students the second year and is projected to serve 110 students next year. The Crossett school district is expanding the center facility to include two more classrooms. The

additional floor space was badly needed. It will provide room for more individual and small group work. Adequate supervision will be maintained. The students will be involved in learning through doing again next year. The work center program will be funded through the local school district.

This project was designed especially for retarded children. The evaluation procedure used is one that other schools districts could use to measure student achievement in the evaluation of their special education program.

Parkdale

An Exemplary Lower Elementary Reading Program

A. Experimental classes including first, second, third, and fourth grade students will achieve at least one full grade level in reading after receiving instruction with Open Court instructional materials during the school year as measured by pre- and post- reading tests administered by the reading staff.

Students were pre-tested with the SRA Reading Achievement, form C. Teachers received many hours of in-service training on how to best utilize the reading program they were teaching and how to supplement their program, when necessary. The teachers also attended training workshops conducted by the publishing company. The SAESC Reading Specialist made weekly visits to the school to work with the teachers and students in both programs.

B. Experimental classes will show a greater increase in reading skills than the control group after receiving instruction with Open Court materials as measured by pre- and post-tests administered by the SAESC staff.

Students were pre- and post-tested with SRA's Reading Achievement Series. Form C was used as a pre-test and Form D was used for post-testing. The SAESC staff administered and scored both pre- and post-tests. First graders were pre-tested with the Harrison Stroud Reading Readiness Profiles.

C. Methods and Procedures. The students in grades 1 - 4 of Parkdale elementary were divided into two classifications for the purpose of analysis. The first classification included all beginning first grade students. The second classification contained all other students who were in grades 1 - 4. This included students repeating the first grade.

Two Open Court classes, one of first and second year students, and one of second, third, and fourth year students, were established. Two Macmillan classes, one of first and second year students, and one of second, third, and fourth year students, were established. Each Open Court class was matched with a Macmillan class.

All students in grades 2 - 4 were administered the SRA Achievement Series, Reading, Form D, as a pre-test and beginning first year students were given the Harrison Stroud Reading Readiness Test. All were post-tested in May, 1972 with the SRA Achievement Series. Scores were compared using an analysis of covariance

The analysis for the second year of operation, as shown in Table 10, indicated that the students in Level I (beginning first grade) who were taught using the Open Court Program had a significantly higher achievement in reading than the students in the Macmillan Program.

There was no significant difference between students in the two groups. The Level I Open Court class had a pre-test mean of 45.55 while the Macmillan class had a pre-test mean of 48.25. The Open Court Level I class had a post-test mean grade level equivalent of 1.45 on the SRA Reading Achievement Series as compared to a 1.125 for the Macmillan class. The means adjusted for initial differences were 1.48 for Open Court and 1.09 for Macmillan. This difference was significant beyond the 0.05 level after the analysis of covariance was performed.

The comparison of the Level II classes indicated that the Macmillan group had a higher grade level equivalent at the beginning of the year and a higher post-test mean grade level equivalent. However, the mean adjusted for initial difference by the formula indicated that the true difference was only 1 month. In actual gains the Macmillan group gained 7 months in the 8 month period while the Open Court group gained only 6 months. The adjusted gains however, indicated that had the groups been equal the Open Court classes would have gained 7.2 months and the Macmillan only 5.8 months

D. The objectives of the project were met only in the first grade level. The major reason for the failure to have a significant difference in Level II was because the students were

TABLE 10. PARKDALE READING ACHIEVEMENT RESULTS

Level	Grade	N	Program	Pre-Test	Change	Post-Test Mean	Post-Test Adjusted Mean	F-Ratio
I	1	13	Open Court	45.54		1.45	1.48	6.622
		12	Macmillan	48.25		1.125	1.09	
II	2,3,4	23	Open Court	2.00	0.60	2.60	2.72	2.31 NS
		22	Macmillan	2.26	0.70	2.96	2.84	

Formula for Level I Adjustments: $\bar{X}'j = (46.84 - \bar{Y}j) + \bar{X}j$

Formula for Level II Adjustments: $\bar{X}'j = (2.13 - \bar{Y}j) + \bar{X}j$

not introduced to the Open Court program in early grades. Therefore the materials involved a completely different approach from the approach they had used in earlier grades. The objective was not met but the results do provide valuable evidence that the Open Court program should not be introduced into all grades at one time. The program should be introduced sequentially beginning with the first grade the first year and the second grade the second year. This would insure greater success.

Another factor which may have entered the design was the small number of teachers involved which could have caused the teacher variable to be relatively uncontrolled

Warren Science Project

An Exemplary Elementary Science Program

A. 1. Students in fifth and sixth grade experimental classes will show greater achievement gains in science than fifth and sixth grade students in the control groups as measured by the Metropolitan Science Achievement Test administered by the classroom teachers.

2. Students in the fifth and sixth grade experimental classes will experience fewer failures in science than fifth and sixth grade students in the control groups as indicated by the teachers' records which show passing and failing on the basis of school criteria.

3. Students in the fifth and sixth grade experimental classes will exhibit significantly higher attitude scores than students in the fifth and sixth grade control groups as measured by a staff developed attitude scale administered by the SAESC staff.

4. Students in the fifth and sixth grade experimental class will exhibit a greater preference for science than fifth and sixth

grade students in the control groups as measured by a staff developed scale.

B. The activities for all objectives were the same. They included biweekly in-service training of two hours for the fifth and sixth grade science teachers. This was conducted by Dr. Wayne Divine of the science department of the University of Arkansas at Monticello. In these sessions teachers were familiarized with equipment use and assisted in correlating materials and equipment with the textbook.

The second activity involved the use of the laboratory for science instruction for the experimental groups in the fifth and sixth grade. The teachers used the laboratory two of three times each week for instruction in science. The teachers used filmstrips, models and equipment that had been correlated with the science textbook. Some laboratory sessions were unstructured in that students could explore new areas, pursue further areas of interest, review filmstrips, discover how rockets or engines work or read science unitexts on a subject of interest.

C. The 1971-72 evaluations began with the pre-testing of the fifth and sixth grade science classes on achievement, attitudes and preference for science. Fifth graders' achievement was checked with form Am of the Metropolitan Science Test and sixth graders' with form Bm of the Metropolitan. The attitudes of the students in the experimental and control groups only were pre-tested with a staff developed attitude inventory of 20 items. The students' preference for science was pre-tested

with a forced choice instrument developed by the SAESC research and evaluation coordinator.

The pre-test results on the 71-72 sixth grade students were used to make additional analysis of the first year of the project operation. The September, 1971 scores were compared with the May, 1971 scores of these students when they were fifth graders to determine if the experimental groups enjoyed any advantage in subject matter retention over the summer months. The gain scores from September, 1970 to September, 1971 were also examined to attempt to determine if any significant differences existed. The results of these two analyses are presented in Table 11 and 12. The results seem to clearly indicate that September to September testing will give a truer picture of the actual achievement of the students. May test scores tend to be lower in many cases because of several factors. Students are tired of school in May, the weather is nice and students would like to be outside, and the students have taken so many tests they do not perform as well as they can.

The analyses made with the September scores of the sixth grade students in the second year of operation attempted to answer the following research questions.

1. Did the experimental students retain more of the material they had learned than students in the control groups?

2. Did students of the minority race who were in the experimental classes gain more than those in the control classes?

3. Did low achieving females in the experimental class

TABLE 11. RETENTION OF EXPERIMENTAL AND NON-EXPERIMENTAL FIFTH GRADE SCIENCE CLASSES ON MAY 1971 AND SEPTEMBER 1971 METROPOLITAN SCIENCE ACHIEVEMENT TEST SCORES

Group	Number of Students with Losses	Number of Students with no Loss	Chi-Square
Experimental	12	35	5.80
Non-Experimental	39	44	

TABLE 12. ANALYSIS OF MINORITY RACE ACHIEVEMENT IN EXPERIMENTAL AND NON-EXPERIMENTAL CLASSES

Classes	Mean Gain	t-Value
Experimental	1.0 grade levels	1.29
Non-Experimental	0.57 grade levels	

gain more than low achieving females in the control classes?

The data presented in Table 11 was tabulated and presented to provide an answer to the first research question. The Chi-Square test of independence of the number of students in the two groups that had no losses from May, 1971 to September, 1971 was significant at the 0.02 level and beyond. A Chi-Square of only 5.41 was required for significance at the 0.02 level. It should be noted that these students were the fifth graders during the first year of the project. The sixth graders during the first year of the project were not pre-tested in the seventh grade, therefore, no scores were available. A Contingency Coefficient of 0.21 was obtained for the Chi-Square value. On a two by two table such as this the maximum possible Contingency Coefficient is .71. This is considered a moderate Contingency Coefficient and would be considered indicative of some practical value for the findings of this analysis. A Contingency Coefficient is a test of the strength of association between the classification and the variable under study. It is comparable to a Multiple R-Square in Multiple Linear Regression which generally is interpreted as the amount of variance accounted for by a variable.

The data for the analysis concerning the second research question is presented in Table 12. The students of the minority race in the experimental group gained a full year from September to September testing while those in the regular classes gained on 5.7 months. The t-value of 1.29 is significant at the 0.09 level. However, the small sample size does not allow any strong generalizations to be made from this data.

The analysis by sex in the low achieving groups on the September to September testing indicated that girls in the low achieving groups who participated in the laboratory made significantly higher gains in achievement than those in the control classes. The data presented in Table 13 indicate that the differences in the grade level equivalent gains for the two groups was significant at the 0.01 level. The low achieving girls in the experimental classes had a gain in grade level equivalent of 1.06 years while those in the control group had a mean grade equivalent gain of only 0.37 months.

TABLE 13. LOW ACHIEVING GIRLS SEPTEMBER TO SEPTEMBER ACHIEVEMENT GAINS

Group	N	Gain	S^2	Sx-x	t-Value
Experimental	10	1.06	0.46	.275	2.51
Control	15	.37			

The analyses made at the end of the second year of the pilot project attempted to answer the following research questions:

1. Did the students in the fifth and sixth grades in the experimental classes exhibit significantly higher science achievement scores than students in the control classes?

2. Did students in the fifth and sixth grade experimental classes exhibit significantly higher attitude scores at the end of the year than students

in the control classes?

3. Did sixth grade students who were in the experimental classes for two years have significantly higher achievement than students who were in the control class for two years?

4. Did seventh grade students who were in the experimental classes as sixth graders have significantly higher gains in the achievement than students who were in the control class as sixth graders?

5. Did students of the minority race who were in the experimental classes exhibit higher attitudes than those in the control classes?

6. Did students in the experimental groups exhibit a significantly greater preference for science than students in the control groups?

The achievement scores for the second year of the project were analyzed with an independent, one-tailed t-test. The groups were initially compared on the science pre-test scores on the basis of the t-test to determine if any analysis of covariance would be necessary. The data presented in Table 14 indicated that there was no significant differences in the groups on the pre-test. Therefore, an analysis of covariance was determined to be unnecessary for an accurate analysis. The data in Table 14 also indicates that there were no significant differences in the experimental and control groups on the post-test. The gain scores indicate that in the fifth grade the control classes had a higher grade equivalent gain than the experimental group in both comparisons. In the sixth grade the low control group out-gained the low experimental group by 2 months. However, the high experimental group gained approximately 5 months more than the high control group. None of these differences were statistically significant.

TABLE 14. ANALYSES OF SCIENCE ACHIEVEMENT SCORES FOR THE WARREN SCIENCE PROJECT - 1971-72

Grade Group	N	Pre-Test	Post-Test	Change	t-Value
5th Grade					
Control Low	24	3.91	5.01	+1.10	-0.37
Experimental Low	25	4.12	4.92	+0.70	
Control High	26	5.00	6.74	+1.74	-0.78
Experimental High	26	5.40	6.43	+1.03	
6th Grade					
Control Low	21	4.98	5.44	+0.46	-1.11
Experimental Low	21	4.78	5.00	+0.22	
Control High	27	6.56	7.39	+0.83	+1.16
Experimental High	27	6.56	7.82	+1.26	

Attitudes. The pre-test results indicated that there were no significant differences in the attitudes of the students in any of the experimental and control classes. In attitude testing the pre-test scores of the students can generally be expected to be higher than the attitude scores obtained in a May post-testing situation. This is due to the fact that students are tired near the close of school and are anticipating summer vacation. In three of the four experimental classes there was little drop in attitude and in fact two classes in the fifth grade had gains in attitudes. The comparisons are presented in Table 15.

The comparison of the experimental groups and control groups of the fifth grade indicated that the low experimental

TABLE 15. ANALYSES OF ATTITUDE SCORES OF FIFTH AND SIXTH GRADE SCIENCE STUDENTS - 1971-72

Group	Pre-Test	t-Value	Post-Test	t-Value	Change
5th Grade					
Control Low	19.00	Ns	16.30	2.78**	-1.70
Experimental Low	18.30		18.40		+0.10
Control High	16.50	Ns	16.08	1.93**	-0.42
Experimental High	16.76		18.27		+1.51
6th Grade					
Control Low	16.50	Ns	10.96	0.57	-5.54
Experimental Low	15.90		11.59		-4.31
Control High	16.41	Ns	15.78	1.64*	-0.63
Experimental High	17.22		16.96		-0.26

* Significant at the 0.05 level
** Significant at the 0.01 level

group had a mean gain of 0.10 points on the 20-point attitude scale while the control group had a loss of 1.70 points. The experimental low group had a post-test mean of 18.40 while the control group had a post-test mean of 16.30. When these means were compared by means of an independent t-test a t of 2.78 was obtained which indicated that the attitudes of the experimental group were indeed significantly higher at 0.01 level and beyond. This is even more significant when one considers that the control group's pre-test mean was 0.70 points higher initially.

When the attitude scores of the high experimental and control groups were compared, it was determined that the

experimental group had a mean gain of 1.51 on attitude scores while the control group had a loss of 0.42. The post-test mean for the experimental group was 18.27 as compared to a mean of 16.08 for the control group. This difference in post-test means was significant at the 0.01 level when compared with an independent t-test.

The comparison of the attitude scores of the low experimental and low control groups in the sixth grade indicates again as previously stated that some unknown factor had affected both the low groups of the sixth grade. It appears obvious that something had occurred prior to the testing time or during the testing period that adversely affected these scores and thus they do not present a representative picture of their achievement or attitudes. These two groups had a drastic drop in attitudes and many had a drastic drop in grade level on the achievement test. The analysis indicated that there was no significant difference in the post-test means. However, it should be noted that the drop in attitudes for the control group was 1.23 points more than the drop in the attitudes of the experimental group which would be significant.

The comparison of the attitudes of the high sixth grade groups indicated that the experimental post-test mean of 16.96 was significantly higher than the control mean of 15.78 at the 0.05 level.

In order to determine the effects of the laboratory approach on the attitudes of the students of the minority

race, the attitudes of these students in the experimental classes was compared to the attitudes of the students in the control classes. These comparisons are presented in Table 16. The comparison of the minority students in the fifth grade experimental classes with fifth grade students in the control classes showed that the two groups attitudes were initially the same but at the end of the year the mean for the minority race students in the experimental classes was 18.80 and for those in the control classes the mean was 15.36. The independent t-value obtained was 3.31 which is significant at the 0.005 level. This indicates that the laboratory approach did in fact result in significantly higher attitudes for the students of the minority race in the fifth grade. The students in the control group had a mean attitude loss of 3.10 points while those in the experimental group had a mean gain of 0.30 points.

TABLE 16. ANALYSIS OF ATTITUDE SCORE OF MINORITY RACE STUDENTS IN THE FIFTH AND SIXTH GRADE

Group	Pre-Test Mean	t-Value	Post-Test Mean	t-Value	Mean Change
5th Grade					
Control	18.46	Ns	15.36	3.31*	-3.10
Experimental	18.50		18.80		+0.30
6th Grade					
Control	17.08	Ns	11.87	Ns	-5.21
Experimental	15.67		10.64		-5.03

* Significant at the 0.005 level for a one-tailed t-Test.

Comparison of the minority race students in the sixth grade indicated that there was no significant differences. Although, initially, the control groups attitude was higher the control group lost 0.18 points more than the experimental group. The sixth grade attitude scores are again affected by the unknown phenomenon that affected the low achieving sixth grade group. This is based upon the fact that the majority of these students were in the low achieving classes.

The data appears to answer the research question in the affirmative. Some comparisons did not support this conclusion but these comparisons are questionable because of the unknown factor which seems to have adversely affected the results of the low achieving sixth grade students. In all cases the experimental groups had less loss or even gains as compared to losses than did the control classes. Thus it should be concluded that the laboratory approach is an effective means of improving student attitudes toward school, toward the teacher and toward science.

Preference for Science. In order to determine if the laboratory was effective in increasing students preference for science, a comparison was made of the science preference scores of the students in the fifth and sixth grade on a staff developed instrument. Initial comparisons of the pre-test means for all groups indicated no significant differences existed. In all experimental groups in both the fifth and sixth grade the mean post-test scores were higher than the

pre-test scores. An independent t-test was calculated on pre-test scores, on post-test scores and on change scores. The comparison of the post-test scores for the fifth grade low experimental and control groups indicated no significant difference but a t-value of 2.38 was obtained when the change scores were analyzed. This indicated that the experimental group had a higher gain that was significant at the 0.05 level. Table 17 contains this data.

TABLE 17. ANALYSIS OF SCIENCE PREFERENCE SCORES OF FIFTH AND SIXTH GRADERS - 1971-72

Group	Pre-Test	t-Value	Post-Test	t-Value	Change	t-Value
5th Grade						
Control Low	5.63	NS	4.90	1.23	-0.73	2.38**
Experimental Low	5.11		5.33		+0.22	
Control High	5.00	NS	5.12	0.57	+0.12	1.51*
Experimental High	4.80		5.48		+0.68	
6th Grade						
Control Low	4.88	NS	3.77	2.98***	-1.11	3.23****
Experimental Low	4.70		5.11		+0.41	
Control High	5.25	NS	3.55	4.49****	-1.70	5.16****
Experimental High	5.00		5.57		+0.57	

* Significant at the 0.10 level
** Significant at the 0.05 level
*** Significant at the 0.005 level
**** Significant at the 0.001 level

Comparison of the post-test means for the fifth grade high experimental and control groups indicated no significant difference. The comparison of the mean net change for the two groups indicated that the experimental group had a mean gain that was significantly higher at the 0.10 level.

A comparison of the low sixth grade experimental and control groups on post-test means indicated that the experimental mean was significantly higher at the 0.005 level. When the change scores were compared the experimental groups gain of 0.41 points was higher than the control groups loss of 1.11 points at the 0.001 level of significance.

The experimental high group's post-test mean of 5.57 was significantly higher than the control group's mean of 3.55 at the 0.001 level of significance. The experimental high group had a mean gain of 0.57 points as compared to a mean gain of -1.70 for the control group. This difference was significant at the 0.001 level in favor of the experimental group.

From this data it must be concluded that the laboratory will increase the students preference for science and will increase the number of students who indicate science as their favorite subject in school. The levels of significance reached are extremely high for educational research indicating that the laboratory was extremely effective in this area.

Two-Year Achievement Gains. To determine the effects of two years in the program, the students who were in the

laboratory during the fifth and sixth grade were compared with an equal number of students who did not use the laboratory during either year. Because of attrition and various factors only thirteen students could be identified that had been in the experimental groups during both years. These students represent a combination of high and low achievers. This analysis indicated that there was no significant difference in the control and experimental groups. However, those students in the experimental groups gained 1.84 grade levels from September, 1970 to May, 1972 as compared to a gain of 1.73 grade levels for the control group. This difference was not statistically significant. No sound conclusion can be made from this analysis because of the small sample size. Table 18 contains the data for this analysis.

Seventh Grade Follow-Up. The 1970-71 sixth graders were post-tested in May, 1972 as sixth graders to determine if the experimental groups benefited significantly over a longer period of time from the program. Table 19 contains the comparisons of the experimental and control groups as seventh graders. The analyses for both the high and low group comparisons indicated no significant differences in the May, 1972 mean test scores. There was also no significant differences in the achievement gains made during the seventh grade. Although the experimental high group gained approximately two months more than the students who had been in the control class as sixth graders. There was no significant difference in the two year gains of the low

TABLE 18. ANALYSIS OF THE TWO-YEAR SCIENCE ACHIEVEMENT OF THE 1972 SIXTH GRADE STUDENTS

Group	Mean Grade Equivalent September, 1970	t-Value	Mean Grade Equivalent May, 1971	t-Value	Mean Grade Equivalent May, 1972	t-Value
Experimental	4.13	-0.72	5.13	-0.05	5.97	-0.53
Control	4.54		5.16		6.27	

	CHANGE		
	1970-71	1971-72	1970-72
Experimental	1.00	0.84	1.84
Control	0.62	1.11	1.73

TABLE 19. A FOLLOW-UP ANALYSIS OF SEVENTH GRADE ACHIEVEMENT IN SCIENCE

Group	Grade Equivalents			Gain Scores			
	September, 1970	May 1972	t-Value	1971-72	t-Value	1970-72	t-Value
Control Low	4.30	5.87	NS	0.65	NS	1.14	NS
Experimental Low	4.67	5.80		0.43		1.38	
Control High	6.71	8.30	NS	1.13	NS	1.54	1.77*
Experimental High	6.26	8.40		1.30		2.14	

* Significant beyond the 0.05 level.

experimental and control groups. The experimental low group did gain 2.4 months more than the control low group during the two years. The two year gain of 2.14 years for the students who were in the experimental group as sixth graders was significantly higher than the two-year gain of 1.54 years for the control group. It would appear from the data that there is some trend for the students who have been exposed to the laboratory to do slightly better in junior high science.

D. When comparing these scores one has to be aware of several conditions that have distorted the results. One of the factors that apparently affected the results in the sixth grade is the fact that testing error apparently operated very significantly in the low experimental class because so many of the students had a much lower May grade equivalent than they had in September. It is the opinion of the researcher that for some reason the test data was not a good one for this group. Some unknown factor or disruption affected the scores of these students.

A second factor, which has to be a major factor in the outcomes of this project, was the use of the Metropolitan Science Achievement test which is not oriented to the laboratory approach to science teaching. This test is seriously biased to the textbook based methodology. Thus, the selection of a test more appropriate to the project objectives could conceivably produce quite different results.

A major factor in contaminating the results of the study was the "John Henry" effect. This merely means that the students in the control classes felt that they were in competition with the experimental classes and therefore,, their achievement was considerably higher than was to be expected from their past performance. The graphs in Figure 1 indicates the achievement that would be predicted for each of the control groups on the basis of their previous performance and the actual performance of that control group.

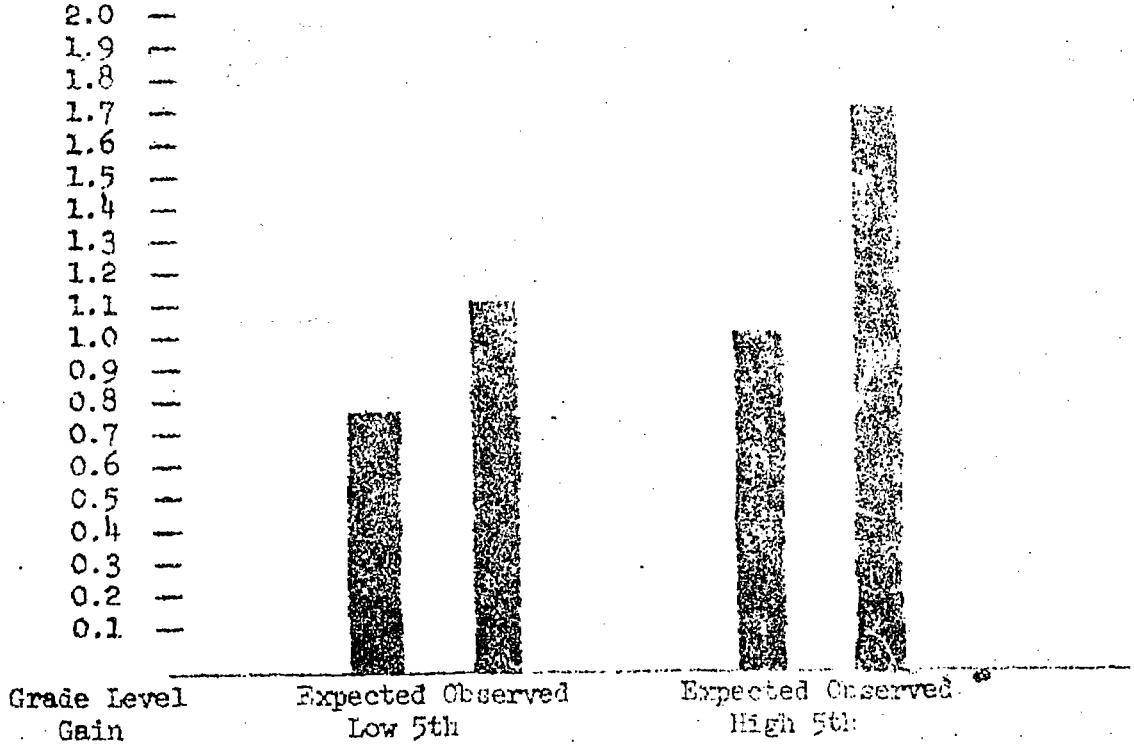

FIGURE 1. EFFECTS OF COMPETITION ON THE ACHIEVEMENT GAINS OF THE FIFTH GRADE CONTROL CLASSES

The data in Figure 1 clearly indicates that the achievement of the fifth grade students in the control classes was much higher than would be expected from the students previous performance. The low control class gained 4 months more than they had gained in any previous year and the high control class gained 7.4 months more than they had gained in any previous year. This did not occur in the sixth grade control classes. The gains in the sixth grade classes were approximately the same as the predicted gain.

Another major factor affecting the results was the fact that the in-service training the teachers received carried over to the control classes. The teachers conducted more experiments using simple materials than are generally done in elementary science classes. This carry over undoubtedly improved the instruction considerably. In addition the teachers made extra efforts to do things for the control class because of the students' disappointment at not being allowed to use the laboratory.

The sixth grade scores were affected severely by the fact that the sixth grade teacher resigned at semester and was replaced by another teacher. During the first semester the sixth grade students were taught by a substitute over four weeks because of the absence of the regular teacher. Thus, the experimental classes missed several weeks of laboratory instruction during the absence of the teacher. It should be noted that both teachers did an excellent job and

that the time that they were where the students received excellent instruction. However, any change of teachers in the middle of the year and having a substitute for a long period necessarily affects the experimental group adversely.

II. General

A. Major Changes

1. Schools - As a result of the services aspect of the Region IX Title III project schools are sharing expertise of their teachers who have been involved in Title III activities to activate new programs. As a result of in-service training and workshops several schools have individualized instruction especially in mathematics. Monticello, Thornton, Rison, Crossett and Dumas are among the schools that have individualized some or all of their instruction. As a result of the special education coordinators assistance in testing and in setting up classes there has been an increase in the number of special education classes.

As a result of the Crossett First Grade Reading Project, the Crossett School System entered into a non-graded primary program this year and the decision has been made to extend the Open Court Program to all first grade classes and to all second grade classes.

As a result of the Crossett Special Education Work Center Crossett has decided to devote a larger area to the program.

As a result of the Warren Science Project the laboratory facilities will be opened to include all fifth and