DOCUMENT RESUME

ED 226 082 UD 022 648

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TITLE Evaluation of the 1981 Basic Skills Summer School Program: An Assessment of Program Impact.
INSTITUTION Montgomery County Public Schools, Rockville, Md. Dept. of Educational Accountability.
PUB DATE Jul 82
NOTE 25p.; For related document, see UD 022 649.
PUB TYPE Statistical Data (110) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Achievement Gains; Attendance; *Basic Skills; Elementary Education; Mathematics Skills; *Program Effectiveness; Program Evaluation; Reading Skills; *Remedial Instruction; Standardized Tests; *Summer Programs; Vocabulary Skills; Writing Skills
IDENTIFIERS Montgomery County Public Schools MD

ABSTRACT

The 1981 Basic Skills Summer School Program in Montgomery County, Maryland public schools provided intensive remedial instruction in reading, writing, and mathematics to pupils who scored very low on national standardized achievement tests. An evaluation of the program's effects found that (1) over all, participating students in grades 4-8 scored significantly higher than nonparticipants in mathematics (especially in grades 7 and 8), but there was no discernible difference in their reading or vocabulary scores; (2) at the end of the first semester, the grades of participants were higher in all areas than those of nonparticipants; and (3) school attendance of former participants was much higher than that of nonparticipants. (Author/WAM)

MONTGOMERY COUNTY PUBLIC SCHOOLS

ROCKVILLE, MARYLAND

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EDWARD ANDREWS
Superintendent of Schools

Prepared by the Department of Eductional Accountability

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EVALUATION OF THE 1981 BASIC SKILLS SUMMER SCHOOL PROGRAM: AN ASSESSMENT OF PROGRAM IMPACT

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EVALUATION OF THE 1981 BASIC SKILLS SUMMER SCHOOL PROGRAM: AN ASSESSMENT OF PROGRAM IMPACT

EXECUTIVE SUMMARY

BACKGROUND

The Board of Education of Montgomery County Public Schools adopted a resolution in May, 1980, establishing a Basic Skills Summer School Program. The purpose of the program was to provide intensive remedial instruction in the basic skills areas of reading, writing, and mathematics to pupils who scored very low on nationally standardized achievement tests.

The present report presents data which indicate the short-term effects of the 1981 Basic Skills Program on Reading and Mathematics and a follow-up assessment of the program's impact on pupil performance during the regular school year.

FINDINGS

QUESTION 1: Did pupils who participated in the Basic Skills Summer School Program make significantly higher gains from pretest to posttest in Reading, Vocabulary, and Mathematics than pupils who did not participate in the program?

Overall, the results from analysis of test scores were mixed. Participants scored significantly higher ($p < .05$) than nonparticipants in Mathematics overall and in Grades 7 and 8. There were no significant differences in test scores of participants and nonparticipants in Reading or Vocabulary. However, both overall and at each grade level, the observed differences in Reading favored participants, even though the results were not statistically significant.

Question 2: Did participants in the Basic Skills Summer Program perform better than nonparticipants during the first semester of the regular school year in terms of grades and/or work study habits in English/Language Arts, Mathematics, and Reading?

Overall, at the end of the first semester the grades of program participants in all areas were higher or showed greater improvement than those of nonparticipants. Participants also received higher marks and showed greater improvement in work-study habits than nonparticipants.

Question 3: Did participants in the Basic Skills Summer School Program exhibit more positive school related behaviors than nonparticipants in terms of better attendance, fewer tardies, and/or fewer times and days suspended?

Overall, results from analysis of school-related behaviors showed that school attendance of former participants was significantly higher ($p < .05$) than that of the nonparticipants. There were no differences in the average number of tardies and suspensions of the two groups.

CONCLUSIONS

While effects are modest, the findings from this evaluation of the 1981 Basic Skills Summer School Program suggest that the program may be succeeding in reaching its goals. Specifically, analyses of the short-term effects of the program suggest that while the changes for Functional Reading were not sufficiently large to be of statistical significance, they were in the positive direction, with participants outperforming nonparticipants. In mathematics, however, the data show that the program was effective in improving pupil scores significantly, particularly for the upper grades.

The findings from the follow-up study show positive long-term program effects. Data collected at the end of the first semester show that there is a consistent trend in each of the areas examined showing that participants in the Basic Skills Summer Program outperformed their nonparticipating peers in their regular school program. This finding is extremely encouraging, as lasting results are not typically found for programs of such short duration. Further, it is consistent with the findings from the test data reported earlier that smaller differences are found in content knowledge, i.e., GPA, than in what might be considered general behavioral areas, i.e., work study skills and attendance.

It is not entirely possible to rule out "self-selection" in explaining these differences, as the two groups differed in a very important variable, their willingness to attend the summer school program. Nonetheless, it seems reasonable to be cautiously optimistic about these study findings and to conclude that the program appears to be having a positive impact on participants.

EVALUATION OF THE 1981 BASIC SKILLS SUMMER SCHOOL PROGRAM: AN ASSESSMENT OF PROGRAM IMPACT

BACKGROUND

The Board of Education of Montgomery County Public Schools adopted a resolution in May, 1980, establishing a Basic Skills Summer School Program. The purpose of the program was to provide intensive remedial instruction in the basic skills areas of reading, writing, and mathematics to pupils who scored very low on nationally standardized achievement tests.

The Department of Educational Accountability was requested to conduct an evaluation of the 1981 program (second year) to obtain data regarding program implementation and effectiveness.

The present report, the final for this year's evaluation, presents data which indicate the short-term effects of the Basic Skills Program in Reading and Mathematics and a follow-up assessment of the program's impact on pupil performance during the regular school year. Specifically, it is designed to answer the following questions:

1. What are the short-term effects of the Basic Skills Summer School Program on pupil achievement in Reading and Mathematics?

2. What are the longer-term effects of the Basic Skills School Program as measured by pupil grades, work study habits, and behavior during the first semester of the regular school year (1981-82)?

In interpreting the findings of this evaluation, two major considerations must, however, be kept in mind.

1. Pupils in both the treatment and control group were administered posttests after having been in the regular school program for almost two months. This instructional period exceeds the length of the Basic Skills Program; therefore, any differences between the two groups at the immediate end of the program might possibly have been reduced or expanded by instruction.

2. Although every attempt was made to use test instruments matching the content of the summer program instruction, the extent to which this goal was achieved is unknown.

A summary of the procedures used to make these assessments is shown in Exhibit 1.

EXHIBIT 1

Procedures used for Assessment of Basic Skills
Summer School Program Impact on Pupil Achievement and Behavior

Assessment Component	Sample	Instrumentation	Data Sources	Data Analysis
Short-term Assessment	The original sample included 1,157 pupils in Grades 4-8. However, due to student absentees, pupil transfers, etc., during pre/post-testing, the final sample consisted of 774 pupils (326 participants and 448 nonparticipants).	o MFRT:[1] Form A o MFRT: Form B o MCPS Basic Skills Reading Test o Objectives Referenced Basic Skills Mathematics Test o Stanford Diagnostic Auditory Vocabulary Test: Green Level	Test scores resulting from pretests and posttests which were administered to all eligible pulls June 1981 and October-November 1981, respectively.	Posttest scores of participants and nonparticipants were analyzed using analysis of covariance with pretests and grade level as the covariate.
Follow-up Assessment	The sample included 221 pupils (114 participants and 107 nonparticipants) enrolled in grades 7-8 who attended the same school the year before and after the summer school program.	---	Pupil grade point averages, workstudy habit average, attendance, and suspension data were collected from report cards for the first semester (1981 and June 1981). The subjects areas reviewed were Reading, Mathematics, and English/Language Arts.	Analysis of covariance was used to compare the first semester 1982 grades point averages, work study habit averages, and attendance of participants and nonparticipants. Grade point average, work study habits, and attendance from 1981 were used as the covariates. T-tests were used to analyze suspension rates.

[1] Maryland Functional Reading Test

FINDINGS

One of the primary questions which this section of the evaluation is designed to answer is, "Did pupils who participated in the Basic Skills Summer School Program make significantly higher gains from pretest to posttest in Reading Vocabulary, and Mathematics than pupils who did not participate in the program?"

Overall, the results from analysis of the tests administered before and after the Basic Skills Summer School Program were mixed. (See Appendix A-1 for details.) Specifically, those data showed

- There were no significant differences between the posttest scores of participant and nonparticipants in Reading. However, both overall and at each grade, differences favored participants.
- There were no significant differences between the posttest scores of participants and nonparticipants in Vocabulary.
- Participants in the Basic Skills Summer School Program scored significantly higher ($p < .05$) than nonparticipants in Mathematics overall and in Grades 7 and 8. The differences between participants and nonparticipants in Grades 4, 5, and 6 were not significant.

Analysis of pre/posttest scores within each of the seven summer school centers also produced mixed results. The differences detected between participants and nonparticipants in most instances were not significant; however, in four of the centers, significant differences were obtained (see Appendices A-2 and A-3 for details). Specifically those data showed:

- Eighth grade participants who attended the Newport Center scored significantly ($p < .05$) higher on the MFRT: Form B than 8th grade nonparticipants.
- Sixth grade participants who attended the Lee Center scored significantly ($p < .05$) lower on the MFRT: Form A than nonparticipants.
- Overall participants who attended the Julius West Center scored significantly ($p < .05$) higher in Mathematics than nonparticipants.
- Eighth grade participants who attended the Takoma Park Center scored significantly ($p < .05$) higher in mathematics than nonparticipants.

The next question posed in this investigation is, "What are the longer-term effects of the Basic Skills School Program as measured by pupil grades, work study habits, and behavior during the first semester of the regular school year (1981-82)?

To address this question, the following issues were examined:

1. Did participants in the Basic Skills Summer Program perform better than nonparticipants during the first semester of the regular school year in terms of achievement and/or work study habits in English/LA, Mathematics, and Reading?

2. Did participants in the Basic Skills Summer School Program exhibit more positive school-related behaviors than nonparticipants in terms of better attendance, fewer tardies, and/or fewer times and days suspended?

The results of this investigation are summarized in the following series of exhibits, which show slight, but definite, positive program effects[1]. The discussion of program effects which follows the graphs are made with reference to both the graphs and the results of analysis of covariance, the latter of which are shown in Appendix A-4.

GRADES

Overall - at the end of the first semester, the grades of program participants were higher or showed greater improvement than those of nonparticipants (see Exhibit 2). Specifically,

- Participants in the summer school program had significantly ($p \leq .10$) higher grade point averages than nonparticipants in English/LA.

- Participants and nonparticipants had identical grade point averages in Mathematics. However, in the previous academic year, grade point averages in Mathematics for participants had been significantly ($p \leq .05$) lower than that of nonparticipants.

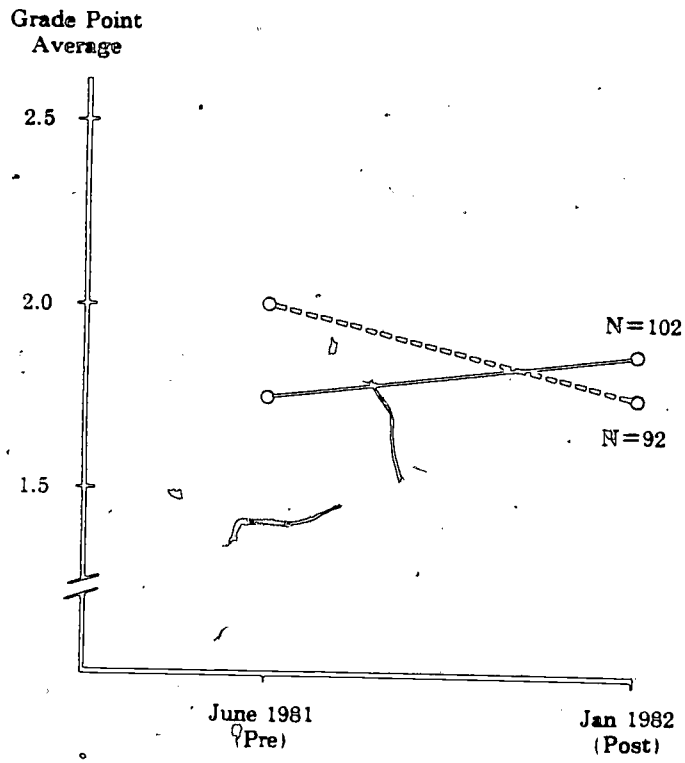
- Participants and nonparticipants did not differ significantly in their grade point averages in Reading.

[1] Typically a difference is not considered statistically significant unless it is attained at the .05 level or significance or less. In the present exploratory analyses, however, we have relaxed this criterion and considered a difference which reaches the .10 level to be significant. This is a common practice where a study is exploratory in nature, when the sample sizes are fairly small, and when trends are considered to be important.

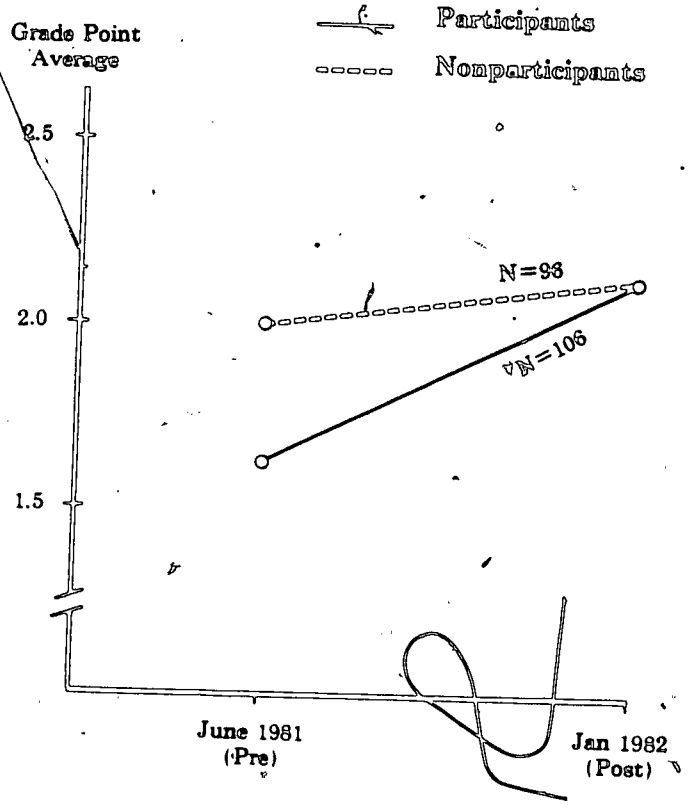
EXHIBIT 2

Pupil Grades By Participation (Pre/Post)

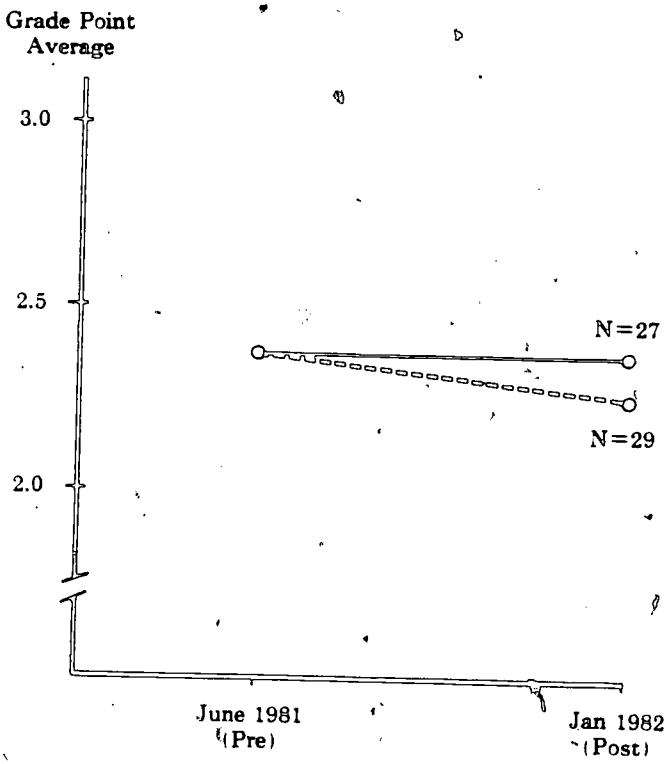
ENGLISH/LA



MATHEMATICS



READING



WORK STUDY HABITS

Overall, at the end of the first semester, work study habit marks of program participants were higher or showed greater improvement than those of nonparticipants (see Exhibit 3). Specifically,

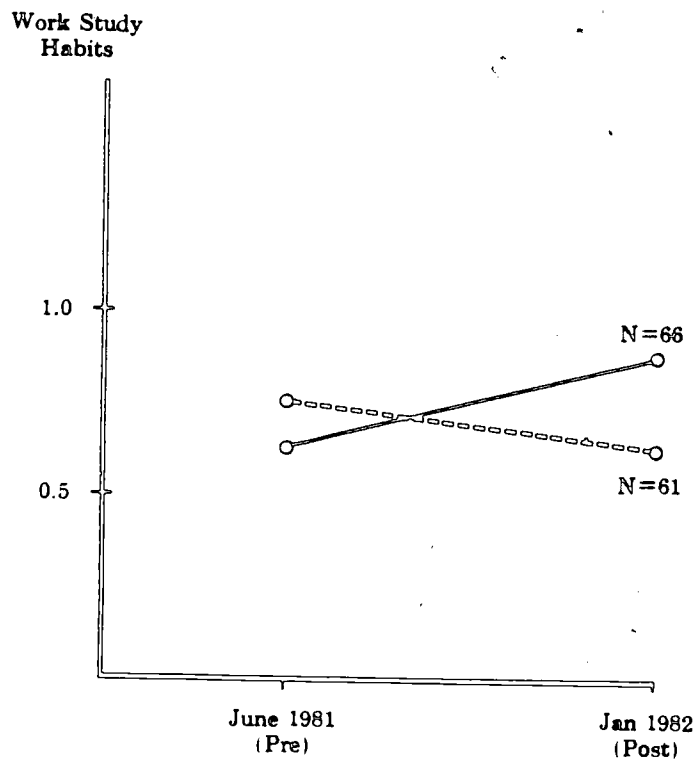
- Participants had significantly higher work study habit averages than nonparticipants in English/Language Arts ($p \leq .09$) and Reading ($p \leq .01$).

- Participants and nonparticipants did not differ significantly in their marks in work study habits in mathematics at the end of the first semester. However, in the previous academic year, participants' work study habit averages had been significantly ($p \leq .05$) lower for participants than nonparticipants.

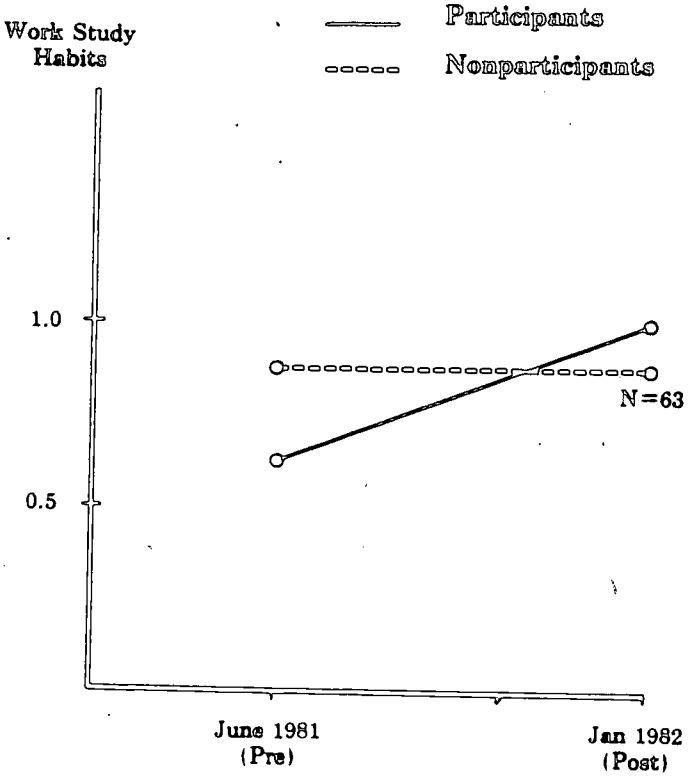
EXHIBIT 3

Pupil Work Study Habits By Participation (Pre/Post)

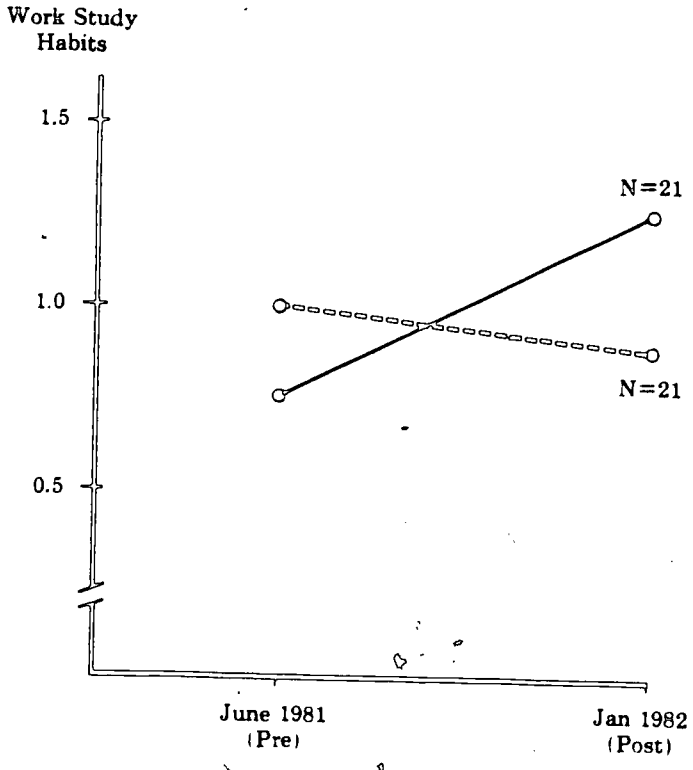
ENGLISH/LA



MATHEMATICS



READING



BEHAVIOR

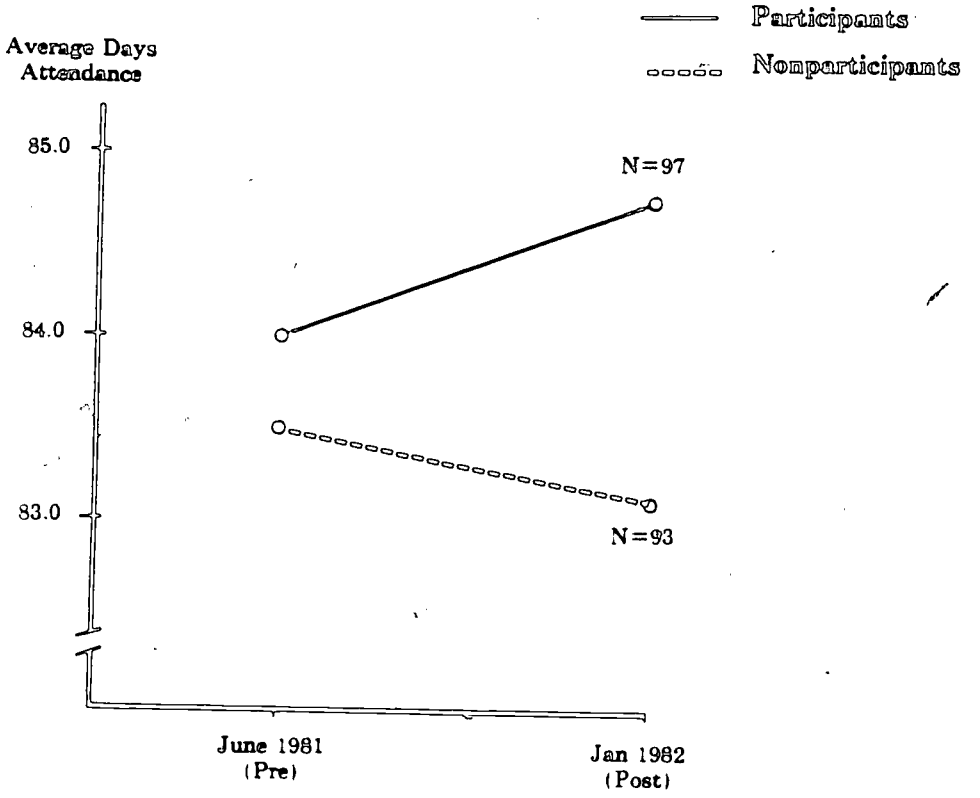
Overall, results from analysis of school-related behaviors were mixed. (See Exhibit 4.) Specifically,

- o School attendance by participants for the first semester (1982) was significantly ($p < .05$) higher than that by nonparticipants.
- o Differences in the average number of tardies between participants and nonparticipants were not significant.[2]
- o Differences in the average number of suspensions as well as the average number of days suspended between participants and nonparticipants were not significant.

[2] Data on tardies and suspensions are not presented in graphic form because only current year data were collected.

EXHIBIT 4

Pupil Attendance By Participation (Pre/Post)



CONCLUSIONS

While effects are modest, the findings from this evaluation of the 1981 Basic Skills Summer School Program suggest that the program may be succeeding in reaching its goals. Specifically, analyses of the short-term effects of the program suggest that while the changes for Functional Reading were not sufficiently large to be of statistical significance, they were in the positive direction, with participants outperforming nonparticipants. In mathematics, however, the data show that the program was effective in improving pupil scores significantly, particularly for the upper grades.

The findings from the follow-up study show positive long-term program effects. Data collected at the end of the first semester show that there is a modest, but consistent trend in each of the areas examined showing that participants in the Basic Skills Summer Program outperformed their nonparticipating peers in their regular school program. This finding is extremely encouraging, as lasting results are not typically found for programs of such-short duration. Further, it is consistent with the findings from the test data reported earlier that smaller differences are found in content knowledge, i.e., GPA, than in what might be considered general behavioral areas, i.e., work study skills and attendance.

It is not entirely possible to rule out "self-selection" in explaining these differences, as the two groups differed in a very important variable, their willingness to attend the summer school program. Nonetheless, it seems reasonable to be cautiously optimistic about these study findings and to conclude that the program does appear to be having a positive impact on participants.

APPENDICES

APPENDIX A-1

Adjusted Posttest Means in Reading and Mathematics by Participants and Nonparticipants

Grade	READING			MATHEMATICS			VOCABULARY		
	Part	Nonpart	Diff	Part	Nonpart	Diff	Part	Nonpart	Diff
4th	54.48 (27)	53.95 (15)	+0.53 NS	9.71 (29)	12.45 (17)	-2.74 NS	30.59 (29)	32.41 (17)	-1.82 NS
5th	65.83 (15)	64.25 (18)	+1.58 NS	13.51 (15)	14.52 (18)	-1.01 NS	34.38 (15)	34.70 (19)	-0.32 NS
6th[a]	91.34 (121)	90.86 (184)	+0.48 NS	18.16 (115)	17.48 (165)	+0.68 NS	- -	- -	- -
7th	75.22 (135)	74.96 (179)	+0.26 NS	21.16 (132)	19.60 (176)	+1.56***	- -	- -	- -
8th[b]	105.8 (21)	103.39 (40)	+2.42 NS	24.05 (20)	21.52 (35)	+2.53*	- -	- -	- -
Total[c]	72.03 (179)	71.63 (213)	+0.40 NS	19.10 (311)	18.17 (411)	+0.93**	32.23 (45)	33.36 (36)	-1.13

[a] Seventh grade Maryland Functional Reading Test: Form A

[b] Ninth grade Maryland Functional Reading Test: Form B

[c] MCPS Basic Skills Reading Test

NS Not significant p .05

* p .05
** p .01
*** p .001

APPENDIX A-2

Analysis Of Adjusted Posttest Means By Participants and Nonparticipants Within Summer School Centers
(Grades 6 - 8)

Grade	NEWPORT Part (N)	-Part (N)	Diff	WEST Part (N)	-Part (N)	Diff	LEE Part (N)	-Part (N)	Diff	RIDGEVIEW Part (N)	-Part (N)	Diff	TAKOMA Part (N)	-Part (N)	Diff
READING															
6th	93.34 (29)	90.71 (45)	+2.63	87.49 (15)	87.66 (37)	-0.17	94.92 (33)	100.08 (47)	-5.16*	89.06 (9)	84.98 (29)	+4.08	89.39 (35)	87.75 (32)	+1.64
7th	72.56 (13)	80.89 (12)	-8.33	78.82 (27)	76.91 (22)	+1.31	75.13 (57)	75.00 (63)	+0.13	65.78 (11)	64.55 (37)	+1.23	79.96 (28)	78.31 (46)	+1.65
8th[b]	117.12 (6)	109.1 (10)	+7.98*	---	---	---	99.25 92)	104.76 (6)	-5.51	---	---	---	101.11 (13)	101.02 (24)	+0.09
MATHEMATICS															
6th	19.40 (27)	18.60 (43)	+0.80	19.77 (11)	17.58 (36)	+2.19	21.22 (31)	21.50 (34)	-0.28	18.30 (9)	13.78 (26)	-0.48	15.02 (37)	14.44 (26)	+0.58
7th	23.72 (11)	21.57 (9)	+2.15	24.81 (26)	23.15 (20)	+1.66	21.23 (58)	20.35 (61)	+0.88	18.77 (12)	16.57 (42)	+2.20	19.24 (25)	18.32 (44)	+0.92
8th	20.80 (6)	19.42 (10)	+1.38	---	---	---	24.58 (3)	22.90 (7)	+1.68	---	---	---	25.72 (11)	22.11 (18)	+3.61*
Total	20.58 (440	19.23 (62)	+1.35	22.19 (37)	20.30 (56)	+1.89*	21.37 (92)	20.87 (102)	+0.50	16.59 (21)	15.45 (68)	+1.14	18.78 (73)	17.37 (88)	+1.41*

[a] Maryland Functional Reading Test: Form A

[b] Maryland Functional Reading Test: Form B

*p .05

APPENDIX A-3

Analysis Of Adjusted Posttest Means By Grade Within Summer School Centers

(GRADES 4-5)

Grade	STRATHMORE Part (N)	-Part (N)	Diff	WELLER ROAD Part (N)	-Part (N)	Diff
VOCABULARY						
4th	33.11 (5)	32.09 (5)	+1.02 (24)	30.17 (12)	32.32	-2.15
5th	-	-	- (14)	34.44 (6)	34.69	-0.25
Total	33.35 (6)	32.98 (8)	+0.37	32.04 (38)	33.27 (25)	-1.23
READING						
4th	32.24 (5)	43.56 (5)	-11.32	60.14 (22)	57.79 (10)	+2.35
5th	-	-	-	68.54 (14)	65.02 (15)	+3.52
Total	35.25 (6)	47.06 (8)	-11.81	64.06 (36)	61.03 (25)	+3.03
MATHEMATICS						
4th	-	-	-	10.76 (24)	11.66 (12)	-0.90
5th	-	-	-	14.09 (14)	14.84 (15)	-0.75
Total				12.23 (38)	13.07 (27)	-0.84

*p .05

APPENDIX A-4

Adjusted First Semester GPA's, WSH, and Attendance
By Participants and Nonparticipants

	Participants		Nonparticipants			
Variable	X	(N)	X	(N)	Diff.	Sign.
English						
GPA	1.93	(102)	1.74	(92)	+0.19	p .10
WSH	0.91	(66)	0.68	(61)	+0.23	p .09
Mathematics						
GPA	2.13	(106)	2.05	(96)	+0.08	NS
WSH	1.01	(66)	0.87	(63)	+0.14	NS
Reading						
GPA	2.40	(27)	2.36	(29)	+0.04	NS
WSH	1.26	(21)	0.78	(21)	+0.48	p .01
Attendance	84.65	(97)	83.24	(93)	+1.41	p .05

GPA 4=A; 3=B; 2=C; 1=D; 0=E

WSH 2=Outstanding; 1=Satisfactory; 0=Need Improvement