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ABSTRACT

This report evaluates the 1984 Search for Elevation, Education & Knowledge (SEEK) prefreshman summer program at Baruch College, City University of New York (CUNY), and describes its curriculum, staffing, recruitment of students, and objectives. Ninety-four students were enrolled: 73.4% were 18 or 19 years old; 73.0% were women; 90.4% were single; 47.9% also spoke a language other than English. Prospective students took the CUNY skills assessment tests in reading, writing, and mathematics in the spring. Seven students were enrolled in reading, 26 in writing, and 65 in mathematics. Student performance was assessed by skills assessment posttests and teacher's observation. Findings showed that 98.9% of the students completed the program. Reading and mathematics students showed improved performance on CUNY skills assessment tests. Class performance did not necessarily predict test performance. Improvement in writing was not apparent in test scores. Most students remained at the same course level. Attendance across classes was inconsistent. Lower attendance in the morning classes and writing classes may have affected learning outcomes. The program was generally well implemented but additional pre-planning and administrative and clerical support before start of classes might alleviate specific problems. Recommendations for future research are given. Tables and appendices provide student and curricular data. (CG)

AN EVALUATION OF

THE SEEK PREFRESHMAN SUMMER PROGRAM AT BARUCH COLLEGE, 1984

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CONTENTS

THE SEEK PREFRESHMAN SUMMER PROGRAM AT BARUCH COLLEGE, 1984

I. Program Description

Background and Objectives

As many as one-fourth of the students who enter Baruch College as freshmen each year do so through SEEK (Search for Education, Elevation, and Knowledge), a special opportunity program for economically and educationally disadvantaged college students. The SEEK program, which offers students financial aid and a range of academic and counseling services, is a means by which the City University of New York (CUNY) promotes open access to its public colleges.

Students from disadvantaged backgrounds have a higher college attrition rate than other students [1]. The SEEK program's objective is to provide assistance that will increase their

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1. For discussion see: Tinto, V., Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research, 1975, 45, 89-125.

chances of success and, ultimately, graduation. SEEK, thus, like the Higher Education Opportunity Program (HEOP), was established to encourage college enrollment and increase the rate of retention among disadvantaged students.

The SEEK Prefresnman Summer Program (PFSP) is conducted annually at Baruch and at each of the otner four-year colleges of the City University. This program, held for six weeks during the summer months, is a college preparatory program for SEEK students who will be beginning their studies as freshmen during the following fall term. As a component of SEEK, the PFSP orfers financial, academic, and counseling services similar to those available during the school year.

The PFSP at Baruch provides remediation in reading, writing, and mathematics. The purpose of remediation is to strengthen students' skills so that they will perform successfully in their college courses and, more specifically, to enable students who have failed one or more CUNY skills assessment tests to pass when retested. CUNY evaluates the basic skills proficiency of its entering freshmen by administering tests in reading, writing, and mathematics, referred to as the Freshman Skills Assessment Program. Students who do not meet their college's criteria for passing these tests are required to take noncredit remedial courses in the subject(s) of difficulty, and must demonstrate that they have passed all of the skills tests by their junior year (61 credits earned). Students who are unable to pass all of

the tests are barred from continuing their studies at the institution.

The summer program also tries to prepare students for the college experience itself. Coursework gives students their first exposure to college instruction. Additionally, group and individual counseling provide students with information about the college environment, its requirements, and the resources available to them. They also offer an opportunity for students to realistically appraise their goals, beliefs, and life circumstances in relationship to the pursuit of a college degree.

Organization

In 1984, as in previous years, the SEEK director selected a summer program director to be responsible for program design and administration, and to recommend candidates for staff positions. The program customarily draws staff from the department of compensatory programs (of which SEEK is a part), the mathematics department, the English department, and recruitment outside the college. In 1984, program staff consisted of nine instructors (one reading, two writing, and six mathematics teachers), ten tutors (one reading, two writing, and seven mathematics tutors), and three counselors (two day and one evening counselor).

Curriculum

Reading and tutorial staff from the SEEK program and mathematics department staff normally participate in curriculum planning. In 1984, the program director and reading staff carried out preliminary planning for reading and writing classes, with some assistance from tutorial instructors; summer class instructors developed the course content. Instructors of mathematics courses followed the mathematics sequence and curriculum of the previous academic year.

The reading course introduced students to college reading materials and library work. Students learned analytic reading skills and practiced reading to increase speed, comprehension, and vocabulary. The course also emphasized the development of good study habits.

In writing courses students read, discussed, and analyzed a variety of materials--e.g., stories, poems, essays, interviews, speeches, and news articles--and wrote essays on selected topics. Instruction focused on grammatical and vocabulary usage, as well as topic development, essay organization, and editing.

The mathematics courses covered topics in arithmetic (0010), elementary algebra (0011-0012), and intermediate algebra (0013). Material was presented through lectures, textbooks, and

assignments.

The counseling component of the program focused on study skills and attitudes. In group counseling, students discussed their approaches to studying, as well as ways to develop more effective methods of note-taking and preparation for class and exams. Counselors reinforced the application of these strategies as they worked with students individually.

A list of the texts used in reading, writing, and mathematics courses appears in Appendix 1.

Schedule

The program schedule is presented in Table 1.

Recruitment

Entering students first learned of the program at a financial aid workshop held in March and a SEEK convocation held in April. At the convocation, students completed a questionnaire, saying whether they planned to attend the prefreshman summer program, their choice of courses, and their preferred time schedule; students who did not complete the questionnaire were canvassed by letter. Once the results of the CUNY skills tests

Table 1

Program Schedule

Subject	Level	Time	# Hrs Class	Class Hours	Tutoring Hours	Counseling Hours
Reading	0001	A.M.	10	M,W 8:15-11:15 T,Th 8:15-10:15	M,W 11:15-1:00 T,Th 10:15-1:00	T,Th 10:00-11:00
Writing	0001	A.M.	10	M,W 8:30-11:30 T,Th 8:30-10:30	M-Th 10:30-11:30	T,Th 11:15-12:30
Writing	0002	A.M.	5.5	Tu,Th 8:30-11:15	No Tutor	T,Th 11:30-12:30
Math	0010	A.M.	8	M-Th 9:00-11:00	M-Th 10:00-11:00	W, 11:30-12:30
Math	0010	EVE.	8	M-Th 6:00-8:00	M-Th 5:00-6:00 or 7:30-8:30	W, 8:00-9:00
Math	0011	A.M.	6	T-Th 9:00-11:00	T-Th 11:00-12:00	T,Th 12:00-1:00
Math	0011	P.M.	6	T-Th 2:30-4:30	T-Th 2:15-2:30 and 4:30-5:15	T,Th 12:00-1:00
Math	0011	EVE.	6	T-Th 6:00-8:00	T-Th 5:00-6:00 or 8:00-8:30	W, 8:00-9:00
Math	0012	P.M.	6	T-Th 2:30-4:30	T-Th 12:00-2:00	T,Th 11:00-12:00
Math	0012	EVE.	6	T-Th 6:00-8:00	T-Th 5:30-6:00 and 7:30-8:00	W, 8:00-9:00
Math	0013	P.M.	6	T-Th 2:30-4:30	T-Th 1:30-2:30 or 4:00-5:00	T,Th 12:00-1:00
Math	0013	EVE.	6	T-Th 6:00-8:00	T-Th 5:00-6:00 or 8:00-8:15	W, 8:00-9:00

were known, students who had expressed interest in attending the program were notified as to their eligibility.

Participation in the program was voluntary. While many students had indicated that they planned to attend, initial registration fell short of expectations. A telephone survey attracted additional students to registration and, consequently registration continued through the first few days of classes. By the second week of the program, a total of 94 students were enrolled and in attendance.

Placement

All students who intended to enter college as freshmen in September, 1984 had an opportunity to take the CUNY skills assessment tests in reading [2], writing [3], and mathematics [4] in April, 1984: to participate in the summer program, students had to take the CUNY tests at that time (pretest). Students then enrolled in summer classes for subjects that they did not pass or for which they received low but passing scores. Baruch college criteria for passing the tests are shown in Table 2.

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2. The CUNY reading assessment test is the reading comprehension subtest of the Descriptive Tests of Language Skills. The test consists of 45 multiple-choice questions on understanding main ideas, understanding direct statements, and drawing inferences.

3. The CUNY writing assessment test is a formal method for evaluating student writing samples, using holistic rating and scoring techniques. The technique was developed by the Educational Testing Service.

4. The CUNY mathematics assessment test is a 40-item multiple-choice test of mathematical skills in arithmetic and algebra. The test was created by a CUNY task force.

Table 2

CUNY Skills Assessment Test Criteria

Test	Form	Passing Score	Minimum Score	Maximum Score
Reading	A	25 or at	0	50
Writing	--	8 or above	2	12
Mathematics	--	27 or above	0	40

Students would be retested in the skill area(s) for which they received instruction at the conclusion of the summer program (posttest) [5].

Some students who took the mathematics test achieved a passing total score but scored poorly on the arithmetic or algebra subtest. The college requires that these students take remedial mathematics courses during their freshman year. Seventeen of these students attended mathematics classes in the summer program. They were exempted from retesting in August [6].

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5. Program students were uniformly administered Form A of the reading assessment test at both pre- and post- test administrations.

6. These students performed somewhat better than the other mathematics students in both reading and writing, as well as in math (Appendix 2).

Past experience with remedial students taking the CUNY skills assessment tests has generally indicated that observable improvement in mathematics is possible after a shorter amount of remediation time than is necessary for reading and writing. Thus, while students showed different patterns of performance on CUNY tests (Table 3), the program encouraged students who needed mathematics remediation to enroll in a mathematics class. Five students enrolled in more than one class, all five taking a mathematics and a writing class.

Table 3

Patterns of Performance on CUNY Skills Assessment Tests

CUNY Test Criterion Met?				
Reading	Writing	Mathematics	N	(%)
No	No	No	33	(35.1)
Yes	No	No	24	(25.5)
No	Yes	No	2	(2.1)
No	No	Yes	4	(4.3)
Yes	Yes	No	17	(18.1)
Yes	No	Yes	11	(11.7)
Yes	Yes	Yes	3	(3.2)
Total			94	(100.0)

The program enrolled 7 students in reading, 26 students in

writing, and 65 students in mathematics (48 to be retested, 17 exempt from retesting). Reading students were placed into one class and course level (0001). Writing students were placed into one of two classes taught at different levels (0001, 0002). Students' scores on the CUNY writing test determined their course placement; however, assignment criteria were not applied in a strict manner. Mathematics students were placed on the basis of their arithmetic and algebra subtest scores, in accordance with college placement policies (Appendix 3). Table 4 displays the mean and range of pretest scores of students placed at each reading, writing, and mathematics course level.

Table 4

Pretest Scores of Students Placed in Reading, Writing, and Mathematics Course Levels

Reading Assessment Test			
Reading Level	N	Mean (S.D.)	Score Range
0001	7	18.4 (4.0)	13 - 24

Writing Assessment Test			
Writing Level	N	Mean (S.D.)	Score Range
0001	11	4.4 (1.4)	2 - 6
0002	13	5.8 (0.4)	5 - 6

Mathematics Assessment Test			
Math Level	N	Mean (S.D.)	Score Range
0010	12	13.9 (3.1)	8 - 27
0011	29	18.3 (3.0)	13 - 32
0012	13	24.0 (2.3)	20 - 32
0013	11	28.0 (4.6)	21 - 36

II. The Students

Background Characteristics

The students attending the program were fairly representative of the SEEK freshman population as a whole[1], and similar to those who attended the summer program the previous year[2]. Most of the students were 18 or 19 years old (73.4%), and women (73.0%)· almost all were single (90.4%) and living at home with one or more parents (87.2%). Some students reported having dependents (10.6%).

Half of the students said that they spoke a language other than English (47.9%). In most cases this language was Spanish (29.8%). Other students spoke Chinese (7.4%), French (1.1%), Creole (1.1%), or Hebrew (1.1%). A few students (7.4%) indicated that they spoke another language but did not specify the language.

Appendix 4 summarizes these and other background data.

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1. See: Teilman, S., 1983 Freshman Survey SEEK Analysis, Office of the Dean of Students, Baruch College.

2. Podell, L., SEEK Prefreshman Summer Program 1983 Report, Baruch College.

High School Academic Preparation

The mean high school grade point average of students in the program was 73.6 (N = 82, S.D. = 9.6). Students in reading and writing classes did not differ from students in mathematics classes in their mean high school grade point average (for reading and writing students combined, N = 28, $\bar{X}$ = 74.0; for mathematics students, N = 57, $\bar{X}$ = 73.7). However, as a group, mathematics students entered the program with fewer high school mathematics credits than did students in reading and writing classes; conversely, reading and writing students held fewer high school English credits as a group than did their peers in mathematics classes (Table 5). This observation suggests that among these students, the extent of high school preparation in specific subject areas bears directly on the skills remediation sought in college.

Table 5

Distribution of High School Mathematics and English Credits Held by Reading/Writing and Mathematics Students

H.S. Subject	Number of H.S. Credits	Reading/Writing N	(%)	Mathematics N	(%)
Mathematics	1	6	(24.0)	11	(26.8)
	2	6	(24.0)	19	(46.3)
	3	12	(48.0)	9	(22.0)
	4	0		1	(2.4)
	5	1	(4.0)	1	(2.4)
English	1	6	(21.4)	3	(5.6)
	2	5	(17.9)	12	(22.2)
	3	14	(50.0)	30	(55.6)
	4	2	(7.1)	9	(16.7)
	5	1	(3.6)	0	

Skills Assessment at Program Entry

Students' pretest performance on the CUNY reading, writing, and mathematics skills assessment tests gives a picture of the group's o erall preparedness. Of the 94 students who entered the program, 45 (47.9%) already passed the reading test, 22 (23.4%) the writing test, and 29 (30.9%) the mathematics test. Thus, with respect to each skill area, a majority of students remained who still had to pass the CUNY test. Moreover, most of the

students needed remediation in more than one skill area (62.7%) and fully one-third (35.1%) still had to pass all three tests (Table 2). At entry, the group's average score in each skill area was just at or below passing (Table 6).

Table 6

Students' Mean Performance on CUNY Skills Assessment Tests At Entry

Test	N	Mean	(S.D.)
Reading	87	26.9	(7.1)
Writing	87	6.1	(1.6)
Mathematics	91	21.2	(7.3)

The reading, writing, and mathematics test performance of students by their subject of study are presented in Appendix 5.

III. Program Outcomes

Attendance

Most students attended the program regularly; however, while attendance in reading and mathematics classes was generally high, attendance in writing classes was substantially lower and less consistent (Table 7; also, a breakdown of the distribution of attendance by subject area appears in Appendix 6).

Table 7

Mean Percent Attendance, By Subject Area

	Percent Attendance		
Subject	N	Mean	(S.D.)
Reading	7	93.8	(4.2)
Writing	26	68.3	(22.6)
Mathematics	64	94.5	(9.0)

The poorer attendance in writing classes may have been due to disruptions experienced by those classes as a result of staff changes that took place during the six-week period. Writing 0001

did not have a permanent instructor until the third week, and Writing 0002 lost its tutor as of the first week [1].

Mathematics classes were held during morning, afternoon and evening hours. Attendance in evening mathematics classes was higher than in mathematics classes held earlier in the day, and particularly in the morning (Table 8). These findings, considered with the finding of low attendance in (morning) writing classes, show that attendance in daytime classes was not as good as in evening classes. One possible explanation, based on remarks by staff and students, is that students had difficulty arriving to morning classes due to the early hour at which classes began. However, it should be noted that the opposite finding held true in 1983: at that time, attendance in daytime classes was better than in evening classes[2].

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1. The tutor withdrew from the program and was not replaced.

2. Podell, cited earlier.

Table 8

Mean Percent Attendance in Mathematics Classes,

By Time Session

Time Session	Percent Attendance N	Mean	(S.D.)
Morning	21	91.6	(11.7)
Afternoon	21	94.1	(8.9)
Evening	22	97.7	(4.2)

Program Completion

With the exception of one student, all of the students who attended the program after the first week completed the program (98.9% of students). This is a high rate of completion which compares favorably with rates of completion reported for previous years (98.0% for 1980, 87.9% for 1981, 98.4% for 1982, and 82.8% for 1983) [3].

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3. Bengis, L., 1983 SEEK Prefreshman Summer Program: An Evaluation Report, CUNY Office of Student Affairs and Special Programs, March 1984.

Academic Outcomes

A student's work in a course was ultimately assessed in two ways: through the student's performance on the skills assessment posttest, and from the teacher's judgment of the student's work. At the end of the course the teacher recommended a fall course placement for the student -- at a higher, the same, or a lower level of difficulty -- and assigned a letter grade, based on a variety of criteria -- typically, class assignments, exams, attendance, and student behavior (such as class participation, persistence, etc.). Teachers also considered posttest score in determining fall course placement and grade.

Reading. Academic outcomes for reading students are displayed in Tables 9 - 12. It should be noted that while two of the seven reading students passed the posttest, all of them showed an improvement in their reading scores.

Table 9

Number and Percent of Reading Students

Passing Reading Posttest

N of Students	N Passing	(%)
7	2	(28.6)

Table 10

Reading Students' Achievement on

the CUNY Reading Assessment Test

N	Mean Pretest	(S.D.)	Mean Posttest	(S.D.)	Difference
7	18.4	(4.0)	26.9	(4.0)	8.5

A Wilcoxon matched pairs signed ranks test performed on these data showed that pre- and post- test performance differed significantly at the .01 level.

Table 11

Reading: Distribution of Fall Placements, By Test Pass Status

Fall Placement	Passed Test	Did Not Pass Test	Total	(%)
Higher	2	--	2	(28.6)
Same	--	5	5	(71.4)
Lower	--	--	0	(0.0)

Table 12

Reading: Distribution of Grades, By Test Pass Status

Grade	Passed Test	Did Not Pass Test	Total	(%)
A-,A,A+	--	--	0	(0.0)
B-,B,B+	--	3	3	(42.9)
C-,C,C+	2	2	4	(57.1)
D-,D,D+	--	--	0	(0.0)
F	--	--	0	(0.0)

A somewhat larger percentage of reading students passed the posttest in 1983 (36.4% of the 33 students who took the pre- and posttest) [4]. Given the very small number of reading students in the 1984 program, a comparison of results from the two years is not strongly conclusive.

Writing. Academic outcomes for writing students are shown in Tables 13 - 16. Only 2 of the 26 writing students passed the posttest, and the group showed no significant change in performance from pre- to post- test. Of the 22 students who took both the pretest and the posttest, 8 improved their score, 7 maintained the same score, and 7 scored lower than at pretest.

The lack of clear-cut progress by writing students on retesting presents further evidence that remedial students require substantial instruction before showing significant change on the CUNY writing test. Beyond this, however, the poorer attendance of writing students and the staffing problems encountered by their classes (see page 16) could have hampered achievement.

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4. Bengis, cited earlier.

Table 13

Number and Percent of Writing Students

Passing Writing Posttest

Course Level	N of Students	N Passing	(%)
0001	12	0	(0.0)
0002	14	2	(14.3)
Total	26	2	(7.7)

Table 14

Writing Students' Achievement on

the CUNY Writing Assessment Test

N	Mean Pretest	(S.D.)	Mean Posttest	(S.D.)	Difference
22	5.1	(1.3)	5.4	(1.2)	.3

Table 15

Writing: Distribution of Fall Placements, By Test Pass Status

Fall Placement	Passed Test	Did Not Pass Test	Total	(%)
Higher	2	1	3	(11.5)
Same	0	22	22	(84.6)
Lower	0	1	1	(3.8)

Table 16

Writing: Distribution of Grades, By Test Pass Status

Grade	Passed Test	Did Not Pass Test	Total	(%)
A-,A,A+	2	0	2	(7.7)
B-,B,B+	0	9	9	(34.6)
C-,C,C+	0	13	13	(50.0)
D-,D,D+	0	0	0	(0.0)
F	0	2	2	(7.7)

Results in writing were comparatively better in 1983. At that time, 18.8 percent of writing students who took both the pre- and posttest passed (N = 58) [5].

Mathematics. Mathematics outcomes for mathematics students who passed at pretest (and were exempt from the posttest) and for students who did not pass the pretest are presented in Tables 17-20.

Table 17

Number and Percent of Mathematics Students Passing Mathematics Test

Level	Total N	Passed At Pretest	Remaining N	Passed At Posttest	Total Passed (%)
0010	12	0	12	2	2 (16.7)
0011	29	1	28	8	9 (31.0)
0012	13	7	6	4	11 (84.6)
0013	11	9	2	1	10 (90.9)
Total	65	17 (26.2%)	48	15 (31.3%)	32 (49.2)

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5. Bengis, cited earlier.

Table 18

Achievement on the CUNY Mathematics Assessment Test

N	Mean Pretest (S.D.)	Mean Posttest (S.D.)	Difference	t
47	18.5 (4.3)	23.0 (5.2)	4.5	5.74***

***p < .0001

Table 19

Mathematics: Distribution of Fall Placements,

By Test Pass Status

	Passed Test	Did Not Pass Test		
Fall Placement	At Pretest	At Posttest	Total	(%)
Higher	14	15	22	51 (78.5)
Same	2	0	10	12 (18.5)
Lower	1	0	1	2 (3.1)

Table 20

Mathematics: Distribution of Grades, By Test Pass Status

Grade	Passed Test		Did Not Pass Test		
	At Pretest	At Posttest		Total	(%)
A-,A,A+	7	5	3	15	(23.1)
B-,B,B+	3	6	1	10	(15.4)
C-,C,C+	2	4	8	14	(21.5)
D-,D,D+	3	0	9	12	(18.5)
F	2	0	12	14	(21.5)

A total of 15, or 31.3 percent of the 48 mathematics students who failed the mathematics skills assessment test in April passed at the end of the summer. This represents a smaller percentage of students passing as compared to 1983 when over half of the remaining students (55.1%) passed the test at the end of the summer[6].

In reviewing findings for reading, writing, and mathematics achievement, the reader should be cautious in drawing conclusions regarding the "impact" of the summer program. The extent to which students improved their academic skills as a result of

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6. Bengis, cited earlier.

program participation cannot be known from these data alone, and particularly in the absence of an appropriate control group. Changes in scores reflect a combination of factors, including statistical regression, which in this situation operates in favor of observing somewhat higher posttest scores than would be expected if the improvement were due solely to growth in skills[7].

Attendance and Academic Outcomes

Relationships between attendance and academic outcomes can sometimes suggest whether the extent of program participation has any influence on academic performance. Exploratory analyses to determine whether attendance contributed to test or course performance are reported here.

There was no discernible relationship between attendance and passing the posttest for reading students, mostly because all seven students attended frequently (87-100% attendance). Among writing students no such relationship was observed since the group showed little change in performance on the test. Although

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7. This phenomenon occurs whenever a group is selected on the basis of pretest scores which fall at an extreme end of the distribution of scores.

not demonstrable statistically, some connection between attendance and test performance could be seen among mathematics students who took the posttest, insofar as those that passed the posttest attended 88.2 - 100.0 percent of the time, while those that failed attended 63.6 - 100.0 percent of the time.

With respect to course outcomes--fall placement and grade--attendance seemed to make some difference among mathematics students, attendance being somewhat positively related to grade and fall placement (see Appendix 7). Little relationship between attendance and course outcomes existed for reading and writing students.[8]

Academic outcomes were also examined for their possible relationship to high school academic performance as indicated by high school grade point average and number of high school units in math, science, English, foreign language and other subjects. The only relationships observed were for writing students. Writing students with higher grades tended to have a greater total number of high school units in these subjects combined than writing students with lower grades (see Appendix 8).

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8. Almost all tutoring occurred in group settings as an extension of class instruction. Since tutoring contacts closely reflected students' overall attendance patterns, they were not considered separately for this report.

Counseling

The Survey of Study Habits and Attitudes. Counselors used an attitude measure, the Survey of Study Habits and Attitudes (Brown and Holtzman, Psychological Corporation, 1967), as an instructional tool to increase students' awareness of their study attitudes and behavior. The survey was administered to students twice--once at the beginning and once at the end of the six-week period. The measure presents students with a series of subjective statements about school and academic work and asks them to judge how often they act or feel as stated. Examples of such statements are:

- I put off writing themes, reports, term papers, etc. until the last minute.
- When reading a long textbook assignment, I stop periodically and mentally review the main points that have been presented.
- I feel that teachers make their courses too difficult for the average student.

Students' chose a response to each statement from among five possibilities: rarely, sometimes, frequently, generally, almost always.

Students' initial and final scores on the survey were analyzed to determine whether the group showed systematic change over the counseling period. Students' percentile rankings relative to a validation sample[9] appear in Table 21 below.

Table 21

Distribution of Percentile Scores on the Survey of Study Habits and Attitudes at Initial and Final Administrations

N = 70

Percentile Rank	Initial N	Initial (%)	Final N	Final (%)
76 - 100	10	(14.3)	27	(38.6)
51 - 75	17	(24.3)	14	(20.0)
26 - 50	18	(25.7)	9	(12.9)
0 - 25	25	(35.7)	20	(28.6)

The students who took the survey appear to have improved their scores and overall standing on the measure. It should be noted, however, that students' scores on the survey were, in fact, unusually unstable and for that reason difficult to

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9. The sample consisted of 3054 first-semester freshman from nine public and private colleges across the country.

interpret. Although counselors were instructed to administer the survey in group counseling workshops during the first and last week of the program, the actual times and circumstances of administration differed for many students. The fact that students took the test under widely varying conditions, and possibly other factors, cast doubt on the validity and usefulness of the results. The above findings are presented for reporting purposes only.

Counselor contacts. Students had opportunities to meet with their counselor in individual session. Two of the three counselors maintained records on the number of such meetings held with each student. These counselors' students met with them an average of 6.1 times, as follows:

Table 22

Number of Individual Counseling Sessions

N = 56

Number of Meetings	Students N	(%)
2	2	(3.6)
3	2	(3.6)
4	2	(3.6)
5	16	(28.6)
6	13	(23.2)
7	4	(7.1)
8	16	(28.6)
9	1	(1.8)

The incompleteness of the data available on counseling activities makes it difficult to assess counseling outcomes and their possible relationship to student performance in other areas. Efforts need to be made to strengthen reporting of counseling.

IV. The Program in Operation

A program's success or failure greatly depends on the quality of its day-to-day operation. While the objectives and design of a program may undergo little or no change from year to year, the most crucial aspects of program implementation are rarely the same; moreover, the specific problems that arise and the ways in which they are resolved are likely to have a direct bearing on program outcomes. This section looks at the 1984 program from this perspective, drawing from students' perception of their program experience, as well observations by the author and program staff. These views together present a brief picture of the program and highlight areas for program improvement.

Student Evaluations

Students had an opportunity to express their opinions about the program through a brief survey conducted at the conclusion of classes. Students completed a questionnaire in their classes during the last week, before retaking the CUNY skills assessment tests. The questionnaire asked students to assign an agreement rating to each of 15 positive statements: the rating consisted of

a value from 1 to 5, with 1 representing least agreement and 5 representing most agreement.[1]

The statements probed different areas of program experience: instructional content and style, the availability and effectiveness of tutoring, the quality of course materials, students' confidence in their skills and preparation, and the quality of counseling. The specific statements, and the average ratings assigned by students in reading and writing classes combined and in mathematics classes appear in Appendices 9a and 9b[2].

Students' overall assessment of the program was strongly favorable: the average ratings that they assigned to questionnaire items ranged from 3.7 to 4.5. Students expressed the greatest satisfaction with the quality of courses and instruction. Students were also satisfied with the tutoring they received although, as should be expected, ratings assigned to tutoring were lower in writing where no tutor was present in one of the classes.

Students also expressed confidence that they would do well

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1. Three versions of the same questionnaire were administered, one version for each subject -- that is, reading, writing, or mathematics.

2. Appendix 10 shows the most highly correlated items: students' pattern of responses was consistent with the above specified categories.

on the CUNY skills assessment posttest, and in college courses. Math students were somewhat more confident about their future performance than were reading and writing students as a group.

Perceptions of counseling were mixed. Student ratings for counseling were positive, although lower than those given to course instruction and tutoring.

Observations and Staff Recommendations

The author's impressions stemmed from meetings with program administrators as the program was being developed, and observation of classes, tutoring, and counseling workshops throughout the six-week session. The author also asked staff members to comment on the team approach used and to make specific recommendations. All nine instructors and three counselors, and six of the nine tutors, responded. Their remarks are particularly informative regarding problems that occurred and proposed solutions.

Planning and recruitment began during the spring, somewhat earlier than in previous years. Students received timely and ample notice about the program, and staff members began planning sooner in advance.

The program faced several unanticipated difficulties as it got under way -- budget uncertainties, initially low

registration, late staff assignments, and illness among staff. These problems created some disruptions, due particularly to the extension of the registration period into the first week of classes. Three staff members commented on the need for better and more efficient registration procedures in their recommendations.

Once these initial problems were resolved, instruction in the program went smoothly. The program was successfully organized around a team approach: as planned, all students in a class worked with a staff team consisting of an instructor, a tutor and a counselor. In classes, students, instructors, and tutors appeared to have good rapport and to be fully engaged in course work. In counseling workshops, each counselor adhered to his individual syllabus and approach, and covered content which was largely independent from the content of academic courses. Most students had an opportunity to see their counselor alone at least twice, and usually more than twice.

All staff members, when asked to evaluate the team approach that had been used, were strongly enthusiastic. They reported many positive outcomes, suggesting that the approach a) gave staff members better knowledge of their students, b) allowed students to secure more individualized attention and more immediate feedback from staff, c) allowed instructors to use their time more effectively, d) made students more comfortable due to the presence of the tutor, and e) gave tutors valuable

training through working with instructors.

Some staff members, while favoring the team approach, expressed concern that students may have depended too heavily on the tutor; another comment was that students did not always take advantage of opportunities to get help from the tutor.

The most frequent staff recommendation was that communication within the program be improved. For example, one important component of the team approach -- regular team meetings to discuss student progress -- was not implemented to the extent originally planned. Only some staff teams met as a group, and did so on an "as needed" basis. Also, information regarding room assignments, scheduling, books, and other procedural matters was sometimes difficult to obtain. Seven staff members suggested more frequent and/or formalized staff meetings, with meeting times arranged and announced in advance.

Some course materials arrived late. Nine staff members mentioned materials in their recommendations, most urging that books be available to students at the start of classes. Two suggested that tutors receive the same books as the students.

Staff members made additional recommendations having to do with broader aspects of program policy. For example, five staff members suggested that program time be increased. Suggestions included lengthening the program from 6 to 8 weeks, increasing the number of class sessions per week, and lengthening the

duration of class meetings. Some staff members also suggested that students attend classes in more than one subject area to give them a better start. Two of these staff members felt that students in reading classes should be required to take writing classes as well.

V. Conclusions

Major Findings

The major findings of this study are as follows:

(1) Virtually all the students who attended the program completed the program -- 98.9%.

(2) Reading and mathematics students improved their performance on CUNY skills assessment tests. Their class performance as judged by their teachers was variable and did not necessarily predict test performance.

(3) Improvement in writing was not evident from test scores; most students remained at the same course level at the conclusion of the program.

(4) Attendance in the program was not consistent across classes. The lower attendance observed in morning classes and, particularly, writing, may have been detrimental to learning outcomes.

(5) The program was generally well implemented, however, specific problems were observed which might be alleviated with additional pre-planning and administrative and clerical support to the program prior to the start of classes.

Further Research

The summer program's impact on student performance cannot be fully reflected in this report. To begin with, technical limitations of the study as discussed earlier make interpretation of the findings difficult. Perhaps more importantly, however, the very processes which may account for program outcomes have not been adequately explored within the scope of this study. To understand program effects, questions pertaining to educational treatment and the methods relied on to evaluate it must be more squarely addressed. What skills are being taught in the summer program and are these the skills that students are learning? What is the relationship between the curriculum and the tests? Is the program making maximum use of effective teaching strategies and styles? Does counseling have a direct impact on learning, and if so, how? Do the organizational characteristics of the program support its goals? Questions such as these are important in any discussion of program impact since they aim to identify the factors which contribute to learning. Although the present study could not pursue these questions satisfactorily the prefreshman summer program, conducted annually, provides an excellent context within which to assess organizational, pedagogical, and counseling influences, and to do so over time.

Finally, the program may have long-term consequences which are not immediately evident from summer achievement data. As some researchers have observed, summer school can play a role in

reducing school failure among disadvantaged students in later semesters (See: Kapsis, R.E. and Protash, W., Summer Motivation and Retention. CUNY Office of Institutional Research and Analysis, Office of Academic Affairs, Spring 1983). The prefreshman summer program may help students to succeed in college by:

- increasing the absolute amount of remedial time students receive;
- preparing students for the college experience;
- providing continuity between high school and college;
- promoting the development of effective study habits and attitudes;
- reinforcing the motivation of students who have already demonstrated a willingness to voluntarily participate in summer school.

A comparison of the retention rates and academic performance of summer school participants with nonparticipants would shed further light on whether the program exerts any significant influence on student persistence and growth in college over time.

APPENDIX 1

Texts

Reading

Markstein and Hayakawa, Reading Comprehension: Intermediate.

Writing

0001: Fortune and Gray, Experience to Exposition.

0002: Knepler and Knepler, Crossing Cultures.

Mathematics

0010: Dressler, Preliminary Mathematics. (Amsco)
Donaghey and Ruddel, Fundamentals of Algebra. (Harcourt)

0011: Williams, Basic Mathematics: Arithmetic and Algebra. (Scott-Foresman)

0012: Donaghey and Ruddel, Fundamentals of Algebra. (Harcourt)

0013: Dressler and Rich, Modern Algebra. (Amsco)

APPENDIX 2

Mathematics Students' Mean Performance on CUNY Skills Assessment Pretests, by Pretest Pass Status

	CUNY Skills Assessment Tests, April 1984								
	Reading			Writing			Mathematics		
Math Students	N	Mean	(S.D.)	N	Mean	(S.D.)	N	Mean	(S.D.)
Passed Pretest	17	32.8	(4.6)	17	6.8	(1.4)	17	27.9	(3.1)
Did Not Pass Pretest	44	26.2	(6.7)	44	6.4	(1.4)	48	17.6	(3.6)

APPENDIX 3

Mathematics Placement Criteria,
CUNY Mathematics Skills Assessment Test

Subtest Score		
Arithmetic	Algebra	Required Placement
1 - 10	0 - 8	Math 0010
11 - 20	0 - 8	Math 0011
NA	9 - 11	Math 0012
NA	12 - 15	Math 0013/1002
NA	16 - 20	Math 0013/2005

APPENDIX 4

Student Characteristics

	N	(%)
Sex		
Male	25	(27.0)
Female	69	(73.0)
Age		
17	4	(4.3)
18	42	(44.7)
19	27	(28.7)
20	7	(7.4)
21	6	(6.4)
22	1	(1.1)
24	1	(1.1)
31	1	(1.1)
missing	5	(5.3)

	N	(%)
Ethnicity		
Puerto Rican	16	(17.0)
Other Hispanic	13	(13.8)
Black American	28	(29.8)
Other Black	14	(14.9)
Asian	4	(4.3)
White	5	(5.3)
Other	3	(3.2)
missing	11	(11.7)
Language Background		
English only	38	(40.4)
Other language:		
Spanish	28	(29.8)
Chinese	7	(7.4)
Creole	1	(1.1)
French	1	(1.1)
Hebrew	1	(1.1)
Not specified	7	(7.4)
missing	11	(11.7)

APPENDIX 4, continued

	N	(%)
Living with Parents		
Yes	82	(87.2)
No	3	(8.5)
missing	4	(4.3)
Parents' Relationship		
Together	21	(22.3)
Separated	38	(40.4)
Divorced	16	(17.0)
Other	12	(12.8)
missing	7	(7.4)
High School Grade Point Average		
Under 65.0	1	(1.1)
65.0-69.9	10	(10.6)
70.0-74.9	28	(29.8)
75.0-79.9	35	(37.2)
80.0-84.9	4	(4.3)
85.0 and Above	3	(3.2)
missing	13	(13.9)

	N	(%)
Marital Status		
Single	85	(90.4)
Married	3	(3.2)
missing	6	(6.4)
Have Dependents		
Yes	10	(10.6)
No	77	(81.9)
missing	7	(7.4)

APPENDIX 5

Students' Mean Performance on CUNY Skills Assessment Tests, By Subject of Study

	CUNY Skills Assessment Tests, April 1984								
	Reading			Writing			Mathematics		
Students	N	Mean	(S.D.)	N	Mean	(S.D.)	N	Mean	(S.D.)
Reading	7	18.4	(4.0)	7	4.7	(1.0)	7	19.3	(8.0)
Writing	24	26.8	(7.6)	24	5.2	(1.2)	24	25.2	(9.5)
Mathematics	61	28.0	(6.8)	61	6.5	(1.5)	65	20.3	(5.7)

APPENDIX 6

Distribution of Attendance, by Subject of Study

Percent Attendance	Reading		Writing		Mathematics	
	N	(%)	N	(%)	N	(%)
100	1	(14.3)	3	(11.5)	35	(53.8)
90-99	5	(71.4)	2	(7.7)	17	(26.2)
80-89	1	(14.3)	5	(19.2)	8	(12.3)
70-79			3	(11.5)	1	(1.5)
60-69			3	(11.5)	3	(4.6)
50-59			4	(15.4)		
40-49			3	(11.5)		
30-39			0			
20-29			3	(11.5)		
missing					1	(1.5)

APPENDIX 7

Attendance and Course Outcomes

Bivariate correlations between math attendance, grade, and fall placement were obtained using the Spearman rank correlation procedure. These analyses yielded small positive values for attendance and grade ($r = .38$, $p < .005$) and attendance and fall placement ($r = .33$, $p < .01$). Grade and fall placement were correlated, as would be expected ($r = .67$, $p < .0001$). The following frequency tables show these relationships:

	Math Grade				
Percent Attendance	A	B	C	D	F
100	11	9	6	4	5
90 - 99	4	--	5	6	2
80 - 89	--	1	3	2	2
70 - 79	--	--	--	--	1
60 - 69	--	--	--	--	3

	Fall Placement		
Percent Attendance	Lower	Same	Advanced
100	--	4	31
90 - 99	1	2	14
80 - 89	--	2	6
70 - 79	--	1	--
60 - 69	--	3	--

	Fall Placement		
Grade	Lower	Same	Advanced
A+,A,A-	--	--	15
B+,B,B-	--	--	10
C+,C,C-	--	--	14
D+,D,D-	--	2	10
F	2	10	2

APPENDIX 8

Writing Grades and Number of High School Units

The total number of high school units in English, foreign language, math and science was correlated with grade and other academic outcome variables, using the Spearman rank correlation procedure. For writing students, the correlation between grade and number of high school subject units was .46, $p < .05$.

The relationship can be seen in the frequency table below.

	Number of Units											
Writing Grade	3	4	5	6	7	8	9	10	11	12	13	14
A+,A,A-	--	--	--	--	--	--	--	1	1	--	--	--
B+,B,B-	1	--	--	1	--	1	1	1	2	1	--	--
C+,C,C-	2	--	2	1	2	2	1	1	--	--	1	--
F	--	--	1	--	--	--	--	--	--	--	--	--

Appendix 9a

Students' Evaluation of Courses

Mean Agreement Rating, By Subject of Study

Statement	Reading/Writing N	Mean	(S.D.)	Mathematics N	Mean	(S.D.)
1. The course content was well-organized.	30	4.1	(.4)	54	4.3	(.7)
2. The instructor presented topics clearly.	30	4.5	(.6)	54	4.6	(.7)
3. The instructor encouraged students to ask questions.	30	4.5	(.7)	54	4.4	(.7)
4. The instructor gave me valuable feedback on my work.	29	4.5	(.6)	53	4.2	(.7)
5. The tutor was available when needed.	30	3.5	(1.2)	54	4.6	(.7)***
6. The tutor explained topics clearly.	28	3.5	(1.0)	53	4.5	(.7)***
7. The same materials (texts, workbooks, and/or handouts) should be used again.	30	3.7	(.7)	54	4.1	(.9)
8. The topics covered in class helped me to improve my (reading/writing/math) ability.	30	4.3	(.6)	54	4.1	(.9)
9. I am confident that I will score higher on the CUNY (Reading/Writing/Math) Skills Assessment Test when I take the test again.	30	4.1	(.7)	53	4.5	(.7)*
10. I would recommend this course to other students.	30	4.6	(.5)	54	4.6	(.6)

***$p < .0001$

*$p < .05$

Appendix 9b

Students' Evaluation of Counseling

Mean Agreement Rating

Statement	N	Mean	(S.D.)
1. The counselor was available when needed during workshop and office hours.	81	4.0	(.8)
2. The counselor was knowledgeable about the summer program and procedures.	81	3.9	(1.2)
3. The counselor gave me valuable feedback and assistance.	82	4.1	(1.0)
4. The counseling workshops and individual sessions were well-organized.	82	3.7	(1.0)
5. The counseling workshops helped me to improve my study habits.	81	3.7	(1.0)

APPENDIX 10

Students' Evaluation of the Program

Most Correlated Items

Category	Items	Spearman r
Instructional content	1, 10	.48
Instructional style, interaction with students	3, 4	.45
Students' confidence	8, 9	.43
Tutoring	5, 6	.68
Counseling	11,12,13,14,15	.55-.73
Materials	7	no correlations