DOCUMENT RESUME

ED 306 771 FL 017 969

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TITLE Computer Focused Russian Bilingual Instructional Program, 1986-1987. OEA Evaluation Report.
INSTITUTION New York City Board of Education, Brooklyn. Office of Educational Assessment.
SPONS AGENCY Office of Bilingual Education and Minority Languages Affairs (ED), Washington, DC.
PUB DATE 89
GRANT 00B40141
NOTE 65p.; For the 1985-1986 evaluation, see ED 279 211.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Academic Achievement; Acculturation; *Bilingual Education Programs; Career Awareness; *Computer Assisted Instruction; Curriculum Design; *English (Second Language); Federal Programs; High Schools; Limited English Speaking; Private Schools; Program Descriptions; Program Effectiveness; Program Evaluation; Public Schools; *Russian; Student Characteristics; *Urban Schools
IDENTIFIERS Content Area Teaching; *New York (New York)

ABSTRACT

The Computer Focused Russian Bilingual Instructional Program was a federally-funded program providing instructional and support activities for 321 Russian-speaking students of limited English proficiency at four public and two private high schools in Brooklyn, New York. The main goals of the program were to develop English proficiency and provide content area instruction and computer literacy. Instructional content varied across sites. Public school students took courses in English as a second language, Russian culture and literature, content areas, business, and vocational courses taught in English. Private school students had tutorials and small-group classes in English and academic subject areas. Career awareness was developed by the grade advisor at each site, and additional components included personal counseling, tutoring, parental advisement, curriculum development, and staff training. Analysis of student achievement indicated that program objectives were met in content-area courses and computer literacy/keyboarding but not in English language development. The native language literature and culture courses were found to have unrealistically high objectives. Recommendations for program improvement include additional guest speakers in high technology fields, program-wide activities to promote student contact across sites, more appropriate assessment of English language skills, and more realistic native language goals. (MSE)

COMPUTER FOCUSED RUSSIAN

BILINGUAL INSTRUCTIONAL PROGRAM

1986-1987

OEA Evaluation Report

Prepared by the O.E.A.
Bilingual Education
Evaluation Unit

Jose J. Villegas,
Unit Manager

Margaret H. Scorza,
Principal Investigator

O.E.A. Evaluation Section Report

Robert Tobias, Administrator of Evaluation
Judith S. Torres, Senior Manager

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A SUMMARY OF THE REPORT

The Computer Focused Russian Bilingual Instructional Program was an E.S.E.A. Title VII-funded program that provided instructional and support activities to 321 Russian-speaking students of limited English proficiency (LEP) at four public and two private high schools in Brooklyn. It completed the second year of a three-year funding cycle in June 1987.

The program's main goals were to develop students' English competency and at the same time provide them with instruction in the content areas and computer literacy. Helping students acclimate to American life without becoming alienated from their native culture was an ancillary objective. All students in the program were from the Soviet Union, save six from Poland and two from Hungary. The students varied widely in their English-language proficiency, native-language ability, and content-area knowledge and skills.

The Title VII staff consisted of a project director and secretary, located at the central site, and two resource teachers, a per-session grade advisor/curriculum specialist, and an educational assistant, all of whom worked at the five remaining sites.

All program staff were supervised by the project director, and when on site, the educational assistant assigned to the two private schools was supervised by the school principals, and the staff assigned to the four public high schools were supervised by the assistant principals of the schools' foreign-language departments.

The program's instructional content varied across sites. Students at the public schools took courses in: English as a second language (E.S.L.), Russian culture and literature, content areas, business, and vocational courses taught in English. At the private schools, students took tutorials and small-group classes in English and the content areas.

At all six sites, career awareness was developed by the grade advisor via meetings with members of the school guidance staff and program staff members, as well as through regularly scheduled presentations by guest speakers.

Additional program components included: personal counseling, tutoring, parental advisement, curriculum development, and staff training.

The program's instructional objectives were assessed in English-language development (Criterion Referenced English Syntax Test [CREST]); mastery of the native language (teacher-made tests); mathematics, science, and social studies (teacher-made tests); computer literacy/keyboarding classes (teacher-made

tests); and attendance (school and program records).

Quantitative analysis of student achievement data indicates that:

- Forty-three percent of program students tested with the CREST in the fall, and 14 percent in the spring mastered an average of one CREST skill per month of instruction. Therefore, the program criterion of 80 percent mastery was not met. This was due in part to high pretest scores.

- Over 70 percent of the students achieved a 65 percent passing grade in their content-area courses, thus achieving the proposed objective.

- Students in native language literature and culture classes did not meet the high criterion levels set by the program. This suggests that the criterion (a minimum of 80 percent of the students achieving a 75 percent or higher grade) set in the proposal was unrealistic.

- The program objective was met by students in computer literacy/keyboarding classes, who achieved an overall passing rate of 97 percent.

The following recommendations are offered as possible program improvements:

- Include more guest speakers from high-tech, especially computer-related, fields so that students are better informed about the many employment opportunities in these areas.

- Organize program-wide activities, such as trips and a newsletter, so that there is more contact among bilingual program students at all six sites.

- Change the objective and test instrument proposed for English language development so that students' skills are assessed more appropriately.

- Change the objective in native language studies so that a realistic goal is set for the students.

ACKNOWLEDGEMENTS

The production of this report, as of all Office of Educational Assessment Bilingual Education Evaluation Unit reports, is the result of a cooperative effort of regular staff and consultants. In addition to those whose names appear on the cover, Arthur Lopatin has edited the manuscripts. Shelley Fischer and Martin Kohli have spent many hours creating, correcting, and maintaining data files. Maria Grazia Asselle, Rosalyn Alvarez, Donna Plotkin, and Milton Vickerman have interpreted student achievement and integrated their findings into reports. Finally, Betty Morales has worked intensively to produce, duplicate, and disseminate the completed documents. Without their able and faithful participation, the unit could not have handled such a large volume of work and still have produced quality evaluation reports.

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COMPUTER FOCUSED RUSSIAN BILINGUAL INSTRUCTIONAL PROGRAM

Year of Operation:	1986-87, Second Year of a Three-Year Funding Cycle
Target Language:	Russian
Number of Students Served:	305 Fall, 320 Spring
Project Director:	Florence Seiman
Central Office Location:	South Shore High School 6565 Flatlands Avenue Brooklyn, New York 11236

Public School Sites:

South Shore High School 6565 Flatlands Avenue Brooklyn, New York 11236	Franklin D. Roosevelt High School 5800 Twentieth Avenue Brooklyn, New York 11204
James Madison High School 3787 Bedford Avenue Brooklyn, New York 11229	Abraham Lincoln High School Ocean Parkway and West Avenue Brooklyn, New York 11235

Private School Sites:

Yeshiva Harama 2600 Ocean Avenue Brooklyn, New York	Yeshiva Be'er Hagola 293 Neptune Avenue Brooklyn, New York 11235

I. PROJECT DESCRIPTION

In its second year of funding under Title VII of the Elementary and Secondary Education Act (E.S.E.A.), the Computer Focused Russian Bilingual Instructional Program operated in virtually the identical manner as was described in the Office of Educational Assessment's evaluation report for 1985-86. During the year under review 321 Russian-, six Polish-, and two Hungarian-speaking students of limited English proficiency (LEP)

were served. They attended four public and two private high schools in Brooklyn. Thirty students attended South Shore High School; 67 attended Franklin D. Roosevelt (F.D.R.) High School; 50 attended Abraham Lincoln High School; 31 attended James Madison High School; 64 attended Yeshiva Harama; and 87 attended Yeshiva Be'er Hagola.

The project sought to foster English proficiency and intellectual growth via academic, computer, and career instruction. Students at all six sites received instruction in English as a second language (E.S.L.), and in mathematics, science, and social studies taught in English or with program staff members. In addition to this basic curriculum, students at all six sites took mainstream courses in computer skills, art, music, physical education, and/or business and vocational subjects. To give students in these courses the linguistic help they needed, the program provided small-group or individual tutorial assistance on an as-needed basis.

The Title VII staff consisted of a project director, two resource teachers, an educational assistant, a secretary, and a per session (hourly) grade advisor/curriculum specialist. All staff members were fluent in both English and Russian. The project director and secretary were headquartered South Shore. One resource teacher, who also served as community liaison, spent two days a week at James Madison, two days at Abraham Lincoln, and one day at South Shore. The other resource teacher was available for two mornings a week at South Shore, and spent the

rest of his time at F.D.R. The educational assistant spent three days each week at Yeshiva Harama and two days at Be'er Hagola.

The project director was supervised by the manager of the Bilingual/E.S.L. Unit of the New York City Public Schools' Division of High Schools. Her duties included designing and implementing program activities, hiring and supervising project personnel, directing curriculum- and staff-development activities, and maintaining communication with the Board of Education and state and federal agencies.

The resource teachers and educational assistant coordinated project activities at the sites, counseled and tutored program students, provided instruction in native language arts and culture, and served as liaisons between the schools and students' families. Their activities were supervised by the project director and, when on-site, by the assistant principal of each school's foreign language department or, in the case of the yeshivas, by the principal. All staff members communicated regularly with the project director. She reported that there were no conflicts between their Title VII responsibilities and the educational policies of each school.

The program office, located on the third floor of South Shore, was brightly decorated with travel posters of the Soviet Union and Eastern Europe, maps, Russian objects d'art, newspaper clippings, and photographs of students and staff members. Russian-language newspapers and books, popular magazines containing articles on the Soviet Union, Russian/English

dictionaries, and pamphlets on careers, college admission and financial aid were available for student use. The office had a large storeroom which was used for supplies and a small Russian-language lending library that was open to parents as well as students.

II. STUDENT CHARACTERISTICS

The program served a total of 329 students during the year under review, 305 of whom were enrolled in the fall and 320 in the spring. (In other words, 296 students were enrolled both semesters; nine were enrolled in the fall only; and 24 were enrolled in the spring only.) Data also were received for 29 students who were in the program in June 1986 but left before the beginning of the fall semester: 11 graduated; 9 transferred; 5 were mainstreamed; 3 dropped out for unstated reasons; and 1 left for family reasons. One hundred and thirteen students who were served during the academic year left the program for reasons such as graduation, transfer, and leaving the country (see Table 1).

Data on time in the program were available for 254 of the 320 students present in the program during the spring. Of these students, 138 had been in the program for one year or less; 114 had been in the program for two years; and two students had been in the program for two years and also participated in a prior bilingual program.

Three hundred and twenty-one of the program's 329 students (98 percent) were born in the Soviet Union and spoke Russian; six students (1.5 percent) were born in Poland and spoke Polish; and two students (0.6 percent) were born in Hungary, and spoke Hungarian.

Program-wide, the students were 57 percent female, but sex distribution varied from school to school -- ranging from 33

percent female at South Shore to 100 percent female at Yeshiva Harama.

TABLE 1

Number of Students Leaving the Program

Reason For Leaving	Left By January 1987	Left By June 1987	Percent Of Total
Mainstreamed	1	4	4.4
Transferred	5	34	34.5
Left U.S.	-	11	9.7
Graduated	1	40	36.3
Earned G.E.D.	1	-	*
Employment	1	7	7.1
Family Problem	-	1	*
Other Reasons	-	7	6.2
TOTAL	9	104	100.0

*Under one percent

- About 71 percent of the program students left the program because they graduated (36 percent) or transferred to another school (35 percent).

Table 2 presents the distribution of program students by age and grade. Data were available for 309 students: 125 (41 percent) were in grade nine; 89 (29 percent) were in grade ten; 63 (20 percent) were in grade eleven; and 32 (10 percent) were in grade twelve. Twenty-three percent were overage for their grade placement. The largest number of overage students was in grade nine -- 17 students (14 percent of the grade). Seven of 32 twelfth-grade students (22 percent) were overage. The age of the ninth graders ranged from 13 to 18 years, whereas the age of twelfth graders ranged from 17 to 19. Many overage students had entered the program upon arrival from the Soviet Union. Although their academic background was good, after their parents had applied for exit visas practically all were deprived of schooling for periods of up to two years.

TABLE 2

Number of Program Students by Age* and Grade

Age	Grade 9	Grade 10	Grade 11	Grade 12	Total
13	11	0	0	0	11
14	49	3	0	0	52
15	48	32	2	0	82
16	11	41	27	0	79
17	4	13	25	11	53
18	2	0	9	14	25
19	0	0	0	7	7
TOTAL	125	89	63	32	309**

Overage Students	Program-Wide				
Number	17	13	9	7	71
Percent	13.6	14.6	14.3	21.9	23.0

NOTE. Numbers in bold area reflect expected age range for grade.

*Age on June 30, 1987.

**Data for 20 program students were invalid or missing.

- Twenty-three percent of the program students were overage for their grade placement.

Unlike previous programs for Russian students in New York City, the bulk of those enrolled in the Computer Focused Russian Bilingual Program had already spent several years in an American public high school or transferred from yeshivas where most of their time had been spent learning Hebrew. (Several overage students were from the latter group.) Overall, their mean years of education in the United States ranged from 4.5 (s.d. $\pm$ 2.4) for ninth graders to 5.4 (s.d + 2.1) for twelfth graders (see Table 3). However, when analyzed by site, the time spent by students in the American school system varied widely -- from 3.3 years at F.D.R. to 7.7 years at Abraham Lincoln (see Appendix A).

About 50 percent of the program's students were classified as LEP because they had scored below the twenty-first percentile on the English version of the Language Assessment Battery* (LAB) examination. Although the remaining students in the program were somewhat more proficient in English, the project director said

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*The Language Assessment Battery (LAB) was developed by the Board of Education of the City of New York to measure the English language proficiency of non-native speakers of English in order to determine if their level of English proficiency is sufficient to enable them to participate effectively in classes taught in English. The areas measured are listening, reading, writing, and speaking. The LAB was designed to maximize the discrimination of the test for the non-native at the 20th percentile on the norms for the English-proficient sample. This is the cutoff point for eligibility for bilingual and E.S.L. instruction. The Kuder-Richardson Reliability Estimate for the total test was .97 for the high school level (Level 4). Studies have shown that the relative difficulty of items was highly similar for both native and non-native speakers, thus validating the homogeneity of the test's content.

their academic performance was below par for two reasons: problems of cultural adjustment, and a disparity between academic level and competence in English. She also noted that the current program had more students than its predecessors who had spent several years in Israel where they had learned Hebrew and lost (or never acquired) the ability to read and write Russian.

TABLE 3

Students' Years of Education by Grade

	Total Years of Education							Years Education Native Country		Years Education United States	
Grade	≤8	9	10	11	12	>12	Total	Mean	S.D.	Mean	S.D
9	43	53	24	1	1	1	123	4.5	2.5	4.5	2.4
10	13	34	37	4	0	1	89	4.6	2.5	4.8	2.6
11	4	14	20	27	0	1	66	5.0	2.3	5.1	2.6
12	0	2	4	12	14	2	34	5.9	2.1	5.4	2.1
TOTAL	60	103	85	44	15	5	312*	4.8	2.4	4.8	2.5

* Data for 17 program students were invalid or missing.

- The mean years of education in the United States ranged from 4.5 for ninth graders to 5.4 for twelfth graders.
- The mean years of education in the students' native country ranged from 4.5 for ninth graders to 5.9 for twelfth graders.
- Nineteen percent of the students had eight or fewer years of education.

III. FINDINGS

The evaluation findings for the 1986-87 academic year include both objectives measurable by standardized tests and those that were assessable by examining program materials and records, making site visits, and interviewing program staff members. In the following section, findings are presented by the instructional and non-instructional objectives proposed to and accepted by the Office of Bilingual Education and Minority Languages Affairs (OBEMLA).

ENGLISH AS A SECOND LANGUAGE

-- A minimum of 80 percent of the students participating in the program will master an average of one objective per twenty days of instruction as measured by the Criterion Referenced English Syntax Test (CREST).

At the public schools, E.S.L. courses were provided at beginning*, intermediate, advanced, and transitional levels. At the private schools, program students received tutorial assistance in English reading and writing from the Title VII paraprofessional.

Public school students qualified for E.S.L. instruction by scoring below the twenty-first percentile on the English version of the LAB. Some students had more advanced English-language skills and were enrolled in mainstream English classes. However, the project director emphasized that many such students were

*At James Madison and Abraham Lincoln this included three daily periods of beginning-level E.S.L. instruction.

unable to realize their potential in mainstream classes because, despite their higher LAB scores, their practical knowledge of English was limited.

The program provided small-group tutorials for both students taking regular E.S.L. courses and those who had scored above the 20th percentile on the LAB. In addition, it encouraged program students to participate in ongoing schoolwide tutorial programs in English.

Classroom Observations

A member of the evaluation team observed E.S.L. classes at three public high schools. All of the classes contained a mixture of Asian, Hispanic, Haitian, Russian, and Middle Eastern students and were conducted entirely in English.

At South Shore, a beginning-level class of 11 students was observed. (Two more students were being tutored in the back of the room by a paraprofessional.) The aim of the lesson was to learn how to use "has" and "have" as auxiliary verbs. The teacher's method was to supply the pronoun and main verb herself, and to then call upon students to supply the missing auxiliary. For the second half of the lesson, the teacher distributed a handout featuring items of furniture commonly found in a living room and asked the students to name each item. Afterward, the teacher asked students to write five sentences about the furniture in their own living rooms. While this exercise was being completed, the teacher provided individualized help to students who needed it. When all the students were through, they read

their compositions aloud, and the teacher corrected each one.

An intermediate-level E.S.L. class was also observed at South Shore. Nineteen students attended. The quality and popularity of fast-food restaurants was the topic. The lesson combined practice in reading, writing, speaking, and listening. The teacher began the class by having the students write in their notebooks the answers to questions in their textbook, Insights and Ideas. The teacher then called upon students to read their answers out loud, while a student volunteer wrote them on the blackboard. The teacher urged the students to speak loudly and enunciate clearly. The students appeared to be enjoying the class and many eagerly raised their hands to answer the teacher's questions.

The two classrooms at South Shore were colorfully decorated: -- the first with posters showing rules of grammar, and examples of antonyms, synonyms, homonyms, and punctuation marks; the second with posters depicting various countries of Asia, Europe, and the Caribbean.

An E.S.L. workshop for 20 beginning-level students was observed at James Madison. The "do-now" exercise asked students to fill in the missing words for five sentences that had been written on the blackboard. When this assignment finished, the teacher called upon students to answer orally. She spoke loudly and clearly, and asked the class to repeat new vocabulary items that sprung up in the ensuing discussion.

Also observed at Madison was an advanced-level E.S.L. class. The teacher was giving a short spelling quiz containing words used

in the Test of English as a Foreign Language (T.O.E.F.L.). Afterward, she called on students to spell out each word, and wrote the correct spelling on the blackboard. The second half of the lesson was a review of the previous day's homework assignment: to answer questions about the first chapter of The Pigman by Paul Zindel. It appeared that nearly all the students had done the assignment, because many raised their hands in response to the teacher's questions.

At F.D.R., a beginning- and an intermediate-level E.S.L. class were observed. The beginning-level class had an attendance of 27. The topic, "What do you like to eat?" was written on the blackboard. To begin the lesson, the students were called upon to correct sentences containing errors that the teacher had written on the blackboard before class started. Then the teacher held up a number of artificial fruits and vegetables, asked students to name each one and state whether they enjoyed eating its real counterpart. She made sure that students answered in full sentences. She then had them ask each other about their alimentary preferences. New words were defined and written on the board. Judging by the amount of joking and laughter, the students appeared to be enjoying the class.

The aim of the intermediate-level E.S.L. class at F.D.R. was to learn "How can we interview our classmates?" Twenty-two students attended. The teacher asked the students to pose as reporters and think about the questions they would ask each other in an interview. Many students volunteered questions, and the

teacher listed them on the blackboard. She also tried hard to involve students who were reluctant to participate. As in the previous class, new words, such as "hobby" and "reporter," were defined and written on the board.

To help learn how the program functioned at the two private school sites, a member of the evaluation team observed the educational assistant tutoring three students at Yeshiva Be'er Hagola. The students had arrived in the United States only the month before, after spending several months in a Viennese transit camp waiting for visas. During this time they were required to study Hebrew. Since their English skills were extremely limited, they had been "pulled out" of their regular English classes for tutoring. In an interview the educational assistant said that at both schools, Russian LEP students were referred to her for tutoring in English, and English-proficient Russian students with academic problems were referred to her for tutoring in the content areas.

Student Achievement in E.S.L.

The assessment instrument used to evaluate the objective in this area was the Criterion Referenced English Syntax Test* CREST).

The CREST was administered at the beginning and the end of each semester. A mastery score to indicate gains was computed for each student by calculating the difference between pretest and posttest. The number of months of instruction between testings was computed for each student by multiplying the number of months between testings by the student's attendance rate. The number of skills mastered per month was calculated by dividing the mean mastery by the mean number of months of instruction between testings.

Table 4 presents the test results for students who were pretested and posttested with the same level. Of the students who were reported to have taken E.S.L. classes (levels 1, 2, and 3), complete data (levels, pretest score, and posttest score) were available for 155 in the fall and 185 in the spring.

Examination of Table 4 reveals that most of the students were

*The Criterion Referenced English Syntax Test (CREST) was developed by the Board of Education of the City of New York to measure mastery of instructional objectives of the E.S.L. curricula, and thus was constructed to maximize content validity. The test contains four items per curricular objective, and mastery of an objective is achieved when three of these items are answered correctly. The test measures mastery of 25 objectives at Levels 1 and 2, and 15 objectives at Level 3. The Kuder-Richardson Reliability Estimates for pretest and posttest administrations of the three levels of the CREST are:

Level 1 -- pretest (.91)/posttest (.96)
Level 2 -- pretest (.94)/posttest (.95)
Level 3 -- pretest (.91)/posttest (.91).

tested at Level 3. Appendices B1 through B6 present students' test scores by school. Overall, students gained 0.9 objectives per month in the fall and 0.6 objectives per month in the spring. Of the students for whom pretest and posttest CREST scores were available, 43 percent gained one or more objectives per month in the fall and 14 percent gained one or more objectives per month in the spring. Thus the program objective was not met.

One reason for not meeting the objective was that students had high pretest scores. Thus, although many students achieved the maximum posttest score possible, they could not show gains of one objective per month on the CREST. The objective is therefore not realistic because the instrument is inadequate for measuring gains for this population: it appears to be at too low a level for these students.

TABLE 4

Results of the Criterion Referenced English Syntax Test

Test Level	Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	MASTERY Mean	MASTERY S.D.	Mean Mastery Per Month	Percentage Meeting Objective
					FALL				
1	11	12.7	5.5	20.3	4.7	7.6	2.1	2.9	100
2	14	13.6	5.4	18.1	5.0	4.5	2.7	1.5	71
3	130	11.2	2.6	13.2	2.3	2.0	1.5	0.7	35
TOTAL	155	11.5	3.3	14.1	3.6	2.6	2.3	0.9	43
					SPRING				
1	15	14.5	5.9	17.0	5.1	2.5	2.1	1.4	27
2	12	18.3	4.8	20.9	3.8	2.6	2.2	1.0	50
3	158	12.0	2.0	13.3	1.4	1.3	1.0	0.5	9
TOTAL	185	12.6	3.2	14.1	3.0	1.5	1.3	0.6	14

- Overall, program students achieved 0.9 CREST skills per month in the fall and 0.6 CREST skills per month in the spring.

ENRICHMENT OF NATIVE LANGUAGE SKILLS

-- A minimum of 80 percent of the students participating in the project will achieve a 75 percent or higher rating in the native language arts component of the program.

The program's resource teachers conducted classes in Russian culture and literature at all four public school sites. Russian culture was taught on a tutorial basis at the two private schools.

According to staff members, students' ability in the native language was mixed: recent immigrants had strong native language skills and could discuss difficult literary texts with a fair degree of sophistication; those who had immigrated as young children or after long stays in Europe or Israel could speak but not read or write fluently. To help the latter group, the resource teachers provided small-group tutoring. At some sites, peer counseling was also available via extracurricular Russian-language clubs.

Classroom Observations

Two Russian literature and culture classes, conducted by the resource teachers, were observed at F.D.R. and Abraham Lincoln. The aim of the F.D.R. class was for students to discuss what they had learned about World War II from their parents and grandparents. Seven students were present. The teacher read aloud a short Russian passage describing one family's experiences during the war. The teacher posed several questions which required the students to compare what they had heard from their relatives with the story they had just read.

The teacher seemed to enjoy good rapport with the students, and there was some joking and laughter during the story's lighter moments. All the students paid close attention to the teacher's reading, and participated enthusiastically in the ensuing discussion.

Nine students were present in the class observed at Abraham Lincoln, including two whose tight programs required that they eat lunch at this time. The topic was Alexander Pushkin's influence on Russian literature. The resource teacher distributed a handout in Russian on Pushkin's life. Several students volunteered to read the selection out loud. The teacher interrupted the reading several times to emphasize various points and wrote new or difficult words on the blackboard. As in the class above, the students actively participated in the lesson. Most were able to answer the teacher's questions about the text.

Student Achievement in Native Language Arts

Sixty-eight percent (rather than the proposed 80 percent) of the students achieved a final grade of 75 percent (see Table 5). This criterion, however, is higher than the citywide standard passing grade (65 percent) used in New York City high schools. Had the standard passing criterion been applied, 88 percent of the students would have passed in the fall and 93 percent would have passed in the spring, thereby more than meeting the 80 percent objective. Therefore, it is recommended that this objective be revised to reflect the city-wide standard as well as students' actual abilities.

TABLE 5

Passing Rates in Native Literature and Culture Courses

SITE	Number of Students	Percent Passing at 75%	Number of Students	Percent Passing at 75%	Overall Passing at 75%
Be'er Hagola	49	57.1	72	48.6	52.0
Harama	—	—	—	—	—
Abraham Lincoln	18	11.1	19	52.6	32.4
James Madison	19	100.0	12	100.0	100.0
Franklin D. Roosevelt	41	85.4	44	81.8	83.5
South Shore	25	88.0	19	94.7	90.9
TOTAL	152	69.7	166	66.9	68.2

- Overall, 68 percent of the program students achieved a passing grade of 75 percent. Thus, the program objective was not met. However, program students at Madison, Roosevelt, and South Shore achieved the program objective during the fall and spring semesters.

INSTRUCTION IN ACADEMIC SUBJECT AREAS

-- Seventy percent of the program students will pass with a passing grade of 65 percent or better on teacher-made tests. Sixty-five percent is a passing grade for the students in the City of New York.

Many program students, including those at the private schools, were enrolled in mainstream offerings in content-area subjects; however, public school students whose English proficiency was limited could attend special content-area courses taught with an E.S.L. approach. South Shore offered such courses in math, biology, hygiene, American history, and global studies; James Madison offered general science, American history, and global studies; F.D.R. offered basic math, general science, biology, chemistry, global studies, and U.S. history and government; and Abraham Lincoln offered biology, American history, and American government. Program staff members were available at all sites to tutor program students in both mainstream and special courses.

Classroom Observations

At the public high schools a member of the evaluation team observed classes in mathematics, science, and social studies. The classes contained LEP students from several nations and were conducted entirely in English.

Twenty-three students were present in a mathematics class observed at F.D.R. The aim of the lesson was to teach students three different ways to write ratios and how to reduce fractions to the lowest common denominator. The teacher wrote several

problems on the blackboard, and the students solved them in their notebooks. All the students participated in the lesson and appeared eager to be called upon to present their answers on the blackboard.

The general science class observed at F.D.R. contained 20 LEP students. The topic of the day's lesson was "How do some animals replace lost parts?" During the lecture on regeneration, the teacher frequently referred to a dessicated starfish, an artificial lobster, and a giant lobster claw. The teacher took care to define, write on the blackboard, and have the students repeat all new terms. Students were sometimes asked to give the names of animals in their native languages. They appeared to enjoy this part very much, and there was much laughter as they compared English terms with their native-language equivalents.

At James Madison, a member of the evaluation team observed a health education class that was being taught for the first time through an E.S.L. methodology. The class contained 26 students. The topic of the day's lesson was "your personality." Students were asked to choose two characters from a book, movie, or television program and to list the personality traits they shared and those they did not share. The students were then called upon to read their responses and discuss the actions and motivations of the characters they had selected. Most had selected characters from popular television shows, such as The Colbys, The A Team, and Stingray. Some students appeared reticent about speaking English in front of the class, and those who spoke did so at an

intermediate level of ability.

An E.S.L. social studies class observed at South Shore contained 29 students. The teacher called upon students to answer the question "Why do new immigrants have problems in the United States?" -- which had been written on the blackboard in English. Based on their responses, the teacher wrote a list of items -- e.g., "the language barrier and cultural differences," -- on the blackboard. Then he spoke about his own family's experiences as immigrants to this country and his own experiences during a long visit to India. During his talk, he referred to several maps posted on the walls. The students clearly were very interested in the topic. Many raised their hand to give specific examples of how their native traditions differed from American culture. They also seemed to like and respect their teacher.

Eighteen students were present in the social studies class for foreign students that was observed at F.D.R. To begin the class, the trilingual teacher (English, Spanish, and Mandarin) distributed a small map of the world to each student and asked them to identify lakes, rivers, mountains, and seas in Asia. Many students raised their hands to contribute information. The teacher wrote new terms, such as "plain," "desert," and "peninsula" on the blackboard and defined each one. The teacher also translated several words for a recently arrived Chinese-speaking student.

In an American history class observed at the same site, students were at work on an assignment from their text. Thirty-

two students were present. As the students worked, the teacher called each one to his desk to review and grade a homework assignment. He appeared to take special care to explain new vocabulary and correct spelling errors. Only one student did not hand in an assignment.

Student Achievement in Academic Subject Areas

Table 6 illustrates program students' performance in content areas. The program objective was met both semesters. Overall, program students' achievement was high (83 percent passing rate). Achievement was highest in social studies courses, with an 89 percent passing rate in the fall and an 82 percent passing rate in the spring.

TABLE 6

Students' Passing Rates in Content-Area Subjects

	FALL		SPRING		TOTAL
COURSE	Number of Students	Percent Passing at 65%	Number of Students	Percent Passing at 65%	Overall Passing at 65%
Math[a]	203	85.2	245	77.1	80.8
Science[b]	212	85.8	229	78.6	82.1
Social Studies[c]	217	88.9	258	82.2	85.3
TOTALS		86.7		79.4	82.8

[a]Math courses ranged from remedial to calculus and computer math.
[b]Science courses ranged from general science to physics.
[c]Social studies courses included: world geography, global history A, B, and C; American history A and B; economics; civics, American studies, and other courses.

- Overall, program students achieved an 83 percent passing rate, thus meeting the proposed objective.

COMPUTER SKILLS CLASSES

-- A minimum of 75 percent of the students participating in the program will be able to perform the following tasks relating to computer literacy/keyboarding:

- Elementary programming skills in BASIC language.
- Touch keyboarding using the alphabetic, numeric, and symbol keyboard.
- Type at least 25 w.p.m. with a high degree of accuracy on a personal computer keyboard.

Each school offered a range of business education and computer literacy courses conducted in English. Whenever possible, computers were made available for students to use during their free periods. The program used existing curricula and software and instructional materials developed by previous Russian bilingual programs. In addition, this year the program developed a Russian/English dictionary containing over 150 definitions of computer-related terms. (See Appendix C.) Program staff members provided tutorial assistance and encouraged peer tutoring by more advanced students.

Classroom Observations

Sixteen LEP students from various ethnic backgrounds attended a typing class observed at F.D.R. The room contained Sharp and IBM electric typewriters, and a chart of the keyboard was posted on the wall. The teacher spoke entirely in English as she presented the new vocabulary for the day's lesson -- to learn filing rules. The teacher then called out fictitious names and asked students in which order they should be filed. Many students were eager to answer, and the teacher called on those who

did not volunteer. Most of the students appeared to understand the material presented in the class, and most could answer the teacher's questions.

A computer skills class with 14 students was observed at Be'er Hagola; approximately half the students were program participants. The students worked at nine Apple personal computers, using an instructional software program that asked them to complete sentences by choosing the correct word from a pair of homonyms. The ten students who shared terminals took turns answering the questions. The program's educational assistant sat among the Russian students, translating unfamiliar English words and making sure that they understood the exercise. All of the students appeared to understand the material, and were able to advance through the program.

Student Achievement in Computer Skills

The instruments used to assess the objectives in this area were teacher-developed tests that included all tasks mentioned in the objective. The classes reported were in computer literacy, keyboard/typing, and typing courses.

Table 7 presents the number of students enrolled and the percentage passing these courses in the fall and spring. Overall, the objectives were met: more than 97 percent of the students were able to perform the required tasks.

TABLE 7

Passing Rates in Computer Literacy Courses

	FALL		SPRING		TOTAL
Content Area	Number of Students	Percent Passing	Number of Students	Percent Passing	Overall Passing Rate
Computer Literacy*	133	96.2	210	98.1	97.4

*Includes computer literacy, keyboard/typing, and typing courses.

- The program's objectives were met both semesters: more than 97 percent of the participating students were able to perform the required tasks related to computer literacy/keyboarding skills.

AFFECTIVE DOMAIN

-- A minimum of 80 percent of the students participating in the program will have developed a more positive attitude about school and its importance for their future lives.

The director of the program pointed out that immigrants from the Soviet Union generally had greater difficulty adjusting emotionally to life in the United States than they did in handling new academic tasks. She pointed out that in the Soviet Union, students had few decisions to make about their educational programs and post-graduation plans. By contrast, in the United States they were expected to choose an educational future and plan how to finance it. Since they had no experience with the American educational system, students' parents were confused by their offspring's range of options and could not provide realistic advice. The director added that most parents' socioeconomic status had declined as a result of the move to the United States, and that some had severe financial problems. The psychological strains this caused sometimes severely disrupted students' home life.

To bridge the knowledge gap and provide emotional support, the program offered students psychological counseling, vocational and college advisement, tutorial assistance, and extracurricular activities.

Psychological Counseling

All program students received the full array of counseling and guidance services that were available at each school.

However, program staff members said that Russian students tended to approach them for help because they were able to discuss students' academic or personal problems in the native language as well as English. In addition, a per session grade advisor/curriculum specialist was available to visit each school to provide individual counseling on an as-needed basis. Program students at Abraham Lincoln also were served on a weekly basis by a counselor from the Russian Adolescent Project. He was Russian-born, bilingual, and thoroughly familiar with both cultures and educational systems. He provided individual or small-group guidance to those students identified by program staff members and classroom teachers as being especially in need of support.

Finally, as part of the program's guest speaker series, a psychologist spoke to students at James Madison and Abraham Lincoln on coping with peer pressure.

College/Vocational Advisement

Staff members, especially the grade advisor, spent a good deal of time advising program participants on college and vocational options because, in many cases, students' parents could not. Helping students set realistic educational goals was a primary concern. Many wanted to apply only to Ivy League colleges because they were the only ones whose names they knew. Other students set their sights too low -- despite demonstrated academic ability, they were determined to enter the job market as quickly as possible.

The career component of the program also included a guest

speaker series coordinated by the grade advisor. Sponsored by the New York City Board of Education's "Open Doors" program, representatives from various professions and institutions addressed students, with program staff members translating whenever necessary. Speakers included: an attorney who addressed students at Abraham Lincoln on the criminal justice system (October 1986); a nutritionist from Brooklyn College's Home Economics and Consumer Studies Department who spoke to students at James Madison (November 1986); a Russian-born attorney who told James Madison students about his experiences as a lawyer (November 1986); a bank representative who lectured at Abraham Lincoln about careers in finance (December 1986); and a pianist/composer who talked about music and musical careers (March 1987).

A member of the evaluation team attended the latter presentation at Abraham Lincoln. The speaker, who had formerly taught music, addressed students from two E.S.L. classes about her current career as a rehearsal pianist and composer. She also spoke about related musical careers, such as sound technician, engineer, concert performer, etc. Although none of the students were interested in a career in music, all paid close attention to the talk, and several responded to the speaker's questions.

For the second half of the lecture, the speaker discussed the origins of music, the different types of music and musical instruments, and the definitions of terms like "harmony," "melody," and "rhythm." She also let the students examine several primitive wind and percussion instruments that she had brought

with her.

During the presentation, the resource teacher sat among the Russian students and translated for those who could not understand the speaker.

Tutoring

Tutorial assistance was the program's backbone. As stated previously, students' academic and linguistic skills varied widely, depending particularly on when their academic careers had been interrupted. To best meet the full spectrum of student academic needs as well as to provide emotional support, one-to-one and/or small-group tutoring and counseling sessions were conducted at all six sites.

When they were not in the classroom, the resource teachers and educational assistant provided tutoring in English, native language arts, and the content areas during students' free periods. During visits to several sites by a member of the evaluation team, staff members were observed providing such assistance to single students and small groups. At South Shore these sessions were conducted in the project office, and in the foreign language office at the other public schools. Peer tutoring was also available for students in need.

Extracurricular Activities

The principal purposes of the extracurricular program were to introduce students to American culture and deepen their knowledge of their native culture. Activities held during the 1986-87 year

included: an "international food fair" at Abraham Lincoln; a folk and popular music assembly at James Madison; and a "foreign language week" celebrations at each school.

Program staff members also promoted the integration of project participants into the larger student body by encouraging them to take part in school-wide activities.

Attendance Outcomes

Staff members believed that the program's emphasis on support services was helping students to develop more positive attitudes toward school.

In order to evaluate the objective regarding students' attitudes toward school, the attendance rate of program students was compared to the school-wide rates. Since the school's attendance rate includes the attendance of program students, statistical significance between program and school attendance was determined through the application of a z-test for the significance of a proportion.* This procedure tests whether the difference between one proportion (the program's attendance) and a standard proportion (the school's attendance) is greater than what can be expected by chance variation.

An examination of Table 8 indicates that the attendance of program students at the four public schools was higher than the attendance of mainstream students at those sites. At Abraham

*Bruning, J.L. and Kintz, B.L. Computational Handbook of Statistics (Glenview, Illinois: Scott, Foresman and Company, 1968).

Lincoln, the higher attendance rate of program students was statistically significant. Data were not available for private school attendance rates; however, the attendance of program students at these sites was generally higher than that of the program students at public schools. Thus, the objective was met.

TABLE 8

Comparison of Program and School-wide Attendance

Program Site	Number of Program Students	Program Students' Attendance	School-wide Attendance	z	p
Yeshiva Be'er Hagola	74	93.8	N/A	-	-
Yeshiva Harama	47	94.6	N/A	-	-
Abraham Lincoln	43	86.1	78.0	2.74	.01
James Madison	29	94.7	86.4	1.32	NS
Franklin D. Roosevelt	65	90.0	84.1	1.31	NS
South Shore	30	87.7	85.3	0.37	NS

PARENTAL INVOLVEMENT

-- A series of E.S.L. classes for parents of LEP students in the project will have been given at four of the target sites.

-- A minimum of seven workshops (one at each of the identified sites) will have been conducted by project staff to inform parents about the project and specifically the computer instruction component of the project.

Encouraging parents to become more involved in their children's education was a continuing priority for program staff. To this end, the program organized a parents' advisory council containing parents from six schools.

In lieu of holding E.S.L. classes, the program referred

interested parents to E.S.L. and citizenship classes offered at Temple Emanu-El, located at 1880 Rockaway Parkway in Brooklyn. Parents also were encouraged to call or visit the project to discuss their children's academic or social problems, to use the program's lending library, and to attend the open-school days held at each site.

Although the objectives were not achieved as proposed, there were indeed efforts to facilitate parental involvement.

CURRICULUM DEVELOPMENT

The program used many materials that had been developed by prior Russian bilingual programs in New York City and also developed additional curricula. Bilingual curricula were developed or adapted in: general science, mathematics, economics, American history, the history of the U.S.S.R., and hygiene. Russian-language curricula were developed or adapted in: career exploration, Russian culture (including language, history, and geography), Russian literature (beginning, intermediate, and advanced levels), and western civilization (based on World History by J. Abramovitz and Po Soyedinonym Shtatam Americi by C. Ginter). In addition, the per-session grade advisor/curriculum specialist developed a Russian/English dictionary of computer terminology that was distributed to program staff members and computer teachers.

STAFF DEVELOPMENT

The project director attended workshops sponsored by the New

York Multifunctional Resource Center at Teachers College. In addition, three staff members continued their education at local universities: a resource teacher took courses at New York University; the educational assistant, at Brooklyn College; and the program secretary, at Kingsborough Community College.

IV. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

In its second year of operation, the Computer Focused Russian Bilingual Instructional Program continued to make satisfactory progress toward achieving its proposed objectives. Students at all sites received instruction in E.S.L. and content-area subjects taught in English or with an E.S.L. approach. In addition, students were enrolled in mainstream courses in computer skills and business and vocational subjects, as well as in art, music, and physical education. Students at the public high schools also took classses in the native language, culture, and literature taught by project staff members.

A review of student achievement revealed that instructional objectives were achieved in content-area and keyboarding courses both semesters. The objectives for CREST achievement and native language arts were not met, because the proposed criteria were unrealistic.

The project's non-instructional component included a network of support services for students, including academic and vocational advisement, psychological counseling, and tutoring; a career program of guest speakers; the development of new curricula materials; training activities for project staff; and contacts with students' parents. However, exposure of students to speakers from computer-related fields seems to have been limited.

The program was well received at all six sites, and the project director and resource teachers had good relations with

administrators and teachers. The program was well administered, and the program staff was highly experienced, having worked in previous Russian bilingual programs at the same sites. In an interview, the principal of Be'er Hagola said she was pleased that her school had chosen to participate in the project because the educational assistant assigned to her site was doing a very good job. She said she had assigned all newly arrived Russian-speaking students to work with the educational assistant on an individual or small-group basis. The assistant principal of foreign languages at F.D.R. was also pleased with the work of the resource teacher and hoped that her school could continue to offer the Russian heritage and culture class after Title VII funding ended. According to staff members at all six sites, as a result of participating in the project, students were enabled to function successfully in the American school environment and the larger culture while at the same time retaining a sense of pride in their native culture.

RECOMMENDATIONS

The following recommendations are offered to improve the project in its third year of operation:

1. Since the current project emphasizes the development of students' computer skills, the career component might stress exposing students to guest speakers from various computer-related industries to present employment opportunities in this field.

2. Although virtually all project students have the same

native language and culture, they have little contact with each other. The project is urged to sponsor field trips or other extracurricular activities for students from two or more sites. The project might also consider publishing a project-wide newsletter containing information on the project and its activities, community-sponsored events for students and their parents, and student artwork, stories, or poems.

3. The objectives in English and native language development should be changed to set realistic goals for the students. Since most students are in advanced E.S.L., a norm-referenced reading test could be used to determine if they are making significant gains. The native language arts objective should use 65 percent as the passing grade.

V. APPENDICES

APPENDIX A.1

Students' Years of Education by Grade
at South Shore

	Total Years of Education						Years Education Native Country		Years Education United States	
Grade	8	9	10	11	12	Total	Mean	S.D.	Mean	S.D.
9	5	2	0	0	0	7	4.9	1.9	3.4	1.7
10	1	5	2	0	0	8	5.0	1.1	4.0	1.2
11	1	3	4	1	0	9	6.0	1.9	3.6	1.8
12	0	0	2	3	1	6	6.7	1.4	4.2	1.7
TOTAL	7	10	8	4	1	30	5.6	1.7	3.8	1.6

- Students on the average had 3.8 years of education in the United States.
- The mean years of education in the native country ranged from 4.9 in grade nine to 6.7 in grade twelve.

APPENDIX A.2

Students' Years of Education by Grade
at Franklin D. Roosevelt

	Total Years of Education					Years Education Native Country		Years Education United States	
Grade	8	9	10	11	Total	Mean	S.D.	Mean	S.D.
9	6	0	0	0	6	4.8	1.6	3.0	1.3
10	11	14	3	0	28	5.5	1.3	3.3	0.9
11	2	9	10	1	22	5.8	1.3	3.6	1.3
12	0	2	1	0	3	6.7	2.1	2.7	1.5
TOTAL	19	25	14	1	59*	5.6	1.4	3.3	1.1

*Data were missing for eight program students.

- The mean years of education in the United States ranged from 3 in grade nine to 2.7 in grade twelve.
- The mean years of education in the native country ranged from 4.8 in grade nine to 6.7 in grade twelve.

APPENDIX A.3

Students' Years of Education by Grade
at James Madison

	Total Years of Education						Years Education Native Country		Years Education United States	
Grade	9	10	11	12	>12	Total	Mean	S.D.	Mean	S.D.
9	8	1	0	0	0	9	3.1	3.7	6.0	3.5
10	0	5	0	0	0	5	4.0	2.0	6.0	2.0
11	1	1	5	0	1	8	4.6	3.7	6.3	3.1
12	0	1	2	5	0	8	5.6	1.3	5.9	0.6
TOTAL	9	8	7	5	1	30*	4.4	3.0	6.0	2.5

*Information for one program student was missing.

- The mean years of education in the United States was six.
- The mean years of education in the native country ranged from 3.1 in grade nine to 5.6 in grade twelve.

APPENDIX A.4

Students' Years of Education by Grade
at Abraham Lincoln

	Total Years of Education							Years Education Native Country		Years Education United States	
Grade	8	9	10	11	12	>12	Total	Mean	S.D.	Mean	S.D.
9	0	9	1	1	0	0	11	2.5	3.4	6.8	3.0
10	1	4	13	1	0	0	19	1.6	3.0	8.2	3.0
11	0	0	1	9	0	0	10	1.7	2.0	9.2	2.0
12	0	0	0	5	3	2	10	5.3	3.3	6.4	2.9
TOTAL	1	13	15	16	3	2	50	2.5	3.2	7.7	2.9

- The mean years of education in the U.S. ranged from 6.4 in grade twelve to 9.2 in grade eleven.
- The mean years of education in the native country ranged from 1.6 for tenth graders to 5.3 for twelfth graders.

APPENDIX A.5

Students' Years of Education by Grade
at Be'er Hagola

Grade	Total Years of Education							Years Education Native Country		Years Education United States	
	8	9	10	11	12	>12	Total	Mean	S.D.	Mean	S.D.
9	28	12	22	0	1	1	64	5.7	1.8	3.3	1.5
10	0	5	8	0	0	0	13	5.6	1.6	4.0	1.6
11	1	1	2	3	0	0	7	5.6	0.8	4.4	0.5
TOTAL	29	18	32	3	1	1	84*	5.7	1.7	3.5	1.5

*Data were missing for three program students.

- The mean years of education in the United Stated ranged from 3.3 in grade nine to 4.4 in grade eleven.
- The mean years of education in the native country was 5.7.

APPENDIX A.6

Students' Years of Education by Grade
at Yeshiva Harama

	Total Years of Education							Years Education Native Country		Years Education United States	
Grade	8	9	10	11	12	>12	Total	Mean	S.D.	Mean	S.D.
9	4	22	0	0	0	0	26	2.6	1.3	6.4	1.3
10	0	6	6	3	0	1	16	5.8	1.7	4.3	1.9
11	0	0	2	8	0	0	10	5.7	1.2	5.1	1.5
12	0	0	0	2	5	0	7	6.0	0.8	5.7	0.5
TOTAL	4	28	8	13	5	1	59*	4.4	2.1	5.5	1.7

*Data were missing for five students.

- The mean years of education in the United States ranged from 4.3 in grade ten to 6.4 in grade nine.
- The mean years of education in the native country ranged from 2.6 in grade nine to 6 in grade twelve.

APPENDIX B.1

Results of the Criterion Referenced English Syntax Test
South Shore

Test Level	Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	MASTERY Mean	MASTERY S.D.	Mean Mastery Per Month
				FALL				
2	4	16.3	1.0	18.3	1.0	2.0	0	0.6
3	12	10.1	2.2	11.7	1.9	1.6	0.8	0.5
TOTAL	16	11.6	3.4	13.3	3.4	1.7	0.7	0.5
				SPRING				
2	2	17.5	3.5	21.5	0.7	4.0	2.8	1.6
3	21	11.9	1.3	13.3	1.3	1.4	0.6	0.5
TOTAL	23	12.4	2.2	14.0	2.7	1.6	1.1	0.6

- Overall, program students mastered 0.5 CREST skills per month in the fall and 0.6 CREST skills per month in the spring.

APPENDIX B.2

Results of the Criterion Referenced English Syntax Test
Franklin D. Roosevelt

Test Level	Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	MASTERY Mean	MASTERY S.D.	Mean Mastery Per Month
				FALL				
2	4	13.5	5.3	18.8	6.4	5.3	3.3	1.9
3	28	8.8	2.6	10.7	2.5	1.9	1.1	0.6
TOTAL	32	9.4	3.3	11.7	4.1	2.3	1.8	0.7
				SPRING				
1	1	13.0	0	15.0	0	2.0	0	0.7
2	5	17.6	7.1	20.8	6.0	3.2	2.3	1.3
3	49	11.0	1.5	12.7	1.2	1.6	1.0	0.6
TOTAL	55	11.7	3.1	13.5	3.1	1.8	1.2	0.7

- Overall, program students achieved 0.7 CREST skills per month in the fall and spring.

APPENDIX B.3

Results of the Criterion Referenced English Syntax Test
James Madison

Test Level	Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	MASTERY Mean	MASTERY S.D.	Mean Mastery Per Month
				FALL				
3	22	13.2	2.3	13.9	2.1	0.7	0.9	0.3
				SPRING				
2	4	20.5	0.6	21.5	1.3	1.0	1.4	0.3
3	20	13.5	1.5	14.4	0.9	0.9	0.9	0.3
TOTAL	24	14.7	3.0	15.6	2.9	0.9	1.0	0.3

- Overall, program students achieved 0.3 CREST skills per month in the fall and in the spring.

TABLE B.4

Results of the Criterion Referenced English Syntax Test
Abraham Lincoln

Test Level	Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	MASTERY Mean	MASTERY S.D.	Mean Mastery Per Month
				FALL				
1	1	22.0	0	25.0	0	3.0	0	1.2
2	2	10.5	.7	16.0	2.8	5.5	2.1	1.4
3	29	13.2	1.0	14.1	1.0	0.8	0.8	0.2
TOTAL	32	13.3	2.0	14.5	2.2	1.2	1.4	0.4
				SPRING				
2	1	15.0	0	18.0	0	3.0	0	1.0
3	25	13.5	2.2	14.4	1.1	0.9	1.2	0.3
TOTAL	26	13.5	2.2	14.5	1.2	1.0	1.3	0.4

- Overall, program students mastered 0.4 CREST skills per month in both the fall and spring semesters.

TABLE B.5

Results of the Criterion Referenced English Syntax Test
Yeshiva Be'er Hagola

Test Level	Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	MASTERY Mean	MASTERY S.D.	Mean Mastery Per Month
				FALL				
1	7	12.6	3.3	21.0	3.9	8.4	1.1	3.4
2	1	19.0	0	25.0	0	6.0	0	2.4
3	23	10.8	0.8	14.5	0.7	3.7	2.6	1.5
TOTAL	31	11.5	2.2	16.3	3.7	4.8	2.2	1.9
				SPRING				
1	11	14.9	4.9	17.6	3.9	2.7	2.4	1.6
3	13	10.7	0.9	11.6	0.9	0.9	0.9	0.5
TOTAL	24	12.6	4.0	14.4	4.0	1.8	1.9	1.0

- Overall, program students mastered 1.9 CREST skills per month in the fall and 1.0 in the spring.

TABLE B.6

Results of the Criterion Referenced English Syntax Test
Yeshiva Harama

Test Level	Number of Students	PRETEST Mean	PRETEST S.D.	POSTTEST Mean	POSTTEST S.D.	MASTERY Mean	MASTERY S.D.	Mean Mastery Per Month
				FALL				
1	3	10.0	7.9	17.0	6.1	7.0	2.0	2.8
2	3	10.3	9.5	16.0	7.9	5.7	3.1	2.3
3	16	10.2	2.6	14.1	1.4	3.9	1.3	1.6
TOTAL	22	10.2	4.4	14.7	3.5	4.5	1.9	1.8
				SPRING				
1	3	13.7	11.0	15.7	10.1	2.0	1.0	0.1
3	16	10.8	0.9	12.5	1.1	1.8	1.0	1.1
TOTAL	19	11.2	3.9	13.0	3.7	1.8	1.0	1.1

- Overall, program students achieved 1.8 CREST skills per month in the fall and 1.1 CREST skills per month in the spring.

APPENDIX C

Sample from Program-Developed
Dictionary

КРАТКИЙ СЛОВАРЬ ТЕРМИНОВ
ИСПОЛЬЗУЕМЫХ ПРИ ПРОГРАММИРОВАНИИ
И РАБОТЕ НА ПОСЛОВНОМ ПРОЦЕССОРЕ

DICTIONARY OF
WORD PROCESSING

ACCESS TIME	ВРЕМЯ ДОСТУПА Интервал времени между моментом выдачи команды на передачу данных / в память или из памяти/ и началом передачи.
ACCOUNTING CAPABILITIES	СЧЕТНЫЕ ВОЗМОЖНОСТИ Устройства, позволяющие системе пословного процессора производить расчеты и бухгалтерские записи
ACCOUNTS PAYABLE	СЧЕТА К УПЛАТЕ Деньги, которые компания должна поставщику
ACCOUNTS RECEIVABLE	СЧЕТА К ПОЛУЧЕНИЮ Деньги, которые компания должна получить от клиентов за проданные товары и услуги
ACCUMULATOR	Аккумулятор Узел арифметического устройства, сохраняющий результаты предыдущих операций для использования их в последующих операциях.
ACK	АСК ОТВЕТНЫЙ СИГНАЛ Обратный сигнал от приемного устройства к передающему устройству, подтверждающий нормальное завершение сеанса связи.
ACRONYM	АКРОНИМ Слово,составленное из первых букв нескольких слов
ACTIVE FILE	АКТИВНЫЙ ФАЙЛ Файл, для которого выполнена процедура откртия,т.е подготовлена рабочая область для ввода данных
ADDRESS	АДРЕС Номер,предоставленный каждому имени в памяти для нахождения нужного текста
ADJUST	ПРИСПОСОБЛЕНИЕ Контрольное устройство, позволяющее добавлять или стирать текст и переставлять поля.
ADMINISTRATIVE SYSTEM	АДМИНИСТРАТИВНЯ СИСТЕМА Та часть системы пословного процессора, которая контролирует выполнение задач, не связанных с печатанием.
ALIGNMENT	СВЯЗКА Та часть пословного процессора, которая связывает различные отрезки текста вместе.
ALPHANUMERIC	Алфавитно-цифровой Набор знаков, включающий буквы, цифры и специальные знаки.
AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE	АМЕРИКАНСКИЙ СТАНДАРТНЫЙ КОД ОБМЕНА ИНФОРМАЦИЕЙ Стандартный восьмибитовый код, используемый для представления информации в системах обработки данных. В этот набор входят служебные знаки, цифры, буквы латинского алфавита и специальные знаки.
ARITHMETIC SECTION	АРИФМЕТИЧЕСКАЯ СЕКЦИЯ Части центрального процессора выполняющая сложение, вычитание, умножение и деление.
ASSEMBLER	ПРОГРАММА АССЕМБЛЕР Системная обслуживающая программа, которая преобразует символические инструкции в команды машинного языка.
UDIO	АУДИО Звук, воспринимаемый человеком.