The Career Awareness Program for Bilingual Haitian and Hispanic Students (CAP) in New York City was designed to provide these high school students of limited English proficiency with instruction in English as a Second Language (ESL), native language arts (NLA), and content area subjects taught bilingually. It also was intended to provide students with personal counseling, tutoring, and orientation to American education and culture. The design also included plans for parent outreach activities. The project enrolled 365 students. Of these, 287 were Haitian and 32 spoke Spanish as primary language. For the most part, the project carried out activities proposed in its design. The project met its objectives for guidance and counseling, career conferences, and staff development, but did not meet its objectives for ESL, NLA instruction in Haitian, and attitude toward school. Objectives for staff awareness of pupil needs and problems and for parental involvement could not be evaluated due to lack of data. Recommendations are made for program improvement, especially in English language and NLA, and improved program evaluation. Appendixes discuss data collection and analysis and instruction materials. (SLD)
Career Awareness Program for Bilingual Haitian and Hispanic Students
(Project CAP)
Transitional Bilingual Education Grant T003A90330
1991-92

FINAL EVALUATION PROFILE
It is the policy of the New York City Board of Education not to discriminate on the basis of race, color, creed, religion, national origin, age, handicapping condition, marital status, sexual orientation, or sex in its educational programs, activities, and employment policies, and to maintain an environment free of sexual harassment, as required by law. Inquiries regarding compliance with appropriate laws may be directed to Mercedes A. Nestle, Director, Office of Equal Opportunity, 110 Livingston Street, Room 601, Brooklyn, New York 11201, Telephone: (718) 935-3320.

7/7/92
ACKNOWLEDGMENTS

This report has been prepared by the Bilingual, Multicultural, and Early Childhood Evaluation Unit of the Office of Research, Evaluation, and Assessment. Thanks are due to Kristine Mercurio for collecting the data and writing the report.

Additional copies of this report are available from:

Dr. Tomi Deutsch Berney
Office of Research, Evaluation, and Assessment
New York City Public Schools
110 Livingston Street, Room 732
Brooklyn, NY 11201
(718) 935-3790   FAX (718) 935-5490
FOREWORD

The body of this report is preceded by an Extract which presents an overview of salient points of the project: funding cycle; enrollment figures; background of students served; admission criteria; and programming features, strengths, and limitations, including the outcome of all objectives. The extract also presents the conclusions drawn by the Office of Research, Evaluation, and Assessment (OREA) about the program and its recommendations for program improvement.

The extract is followed by the body of the report, titled Program Assessment. This includes such information as staffing, program implementation, and outcome and implementation objectives. Instructional objectives are presented first, followed by noninstructional objectives. The report then addresses those aspects of programming mandated by Title VII regulations that do not have specifically stated objectives. This may be information on attendance and dropout rate, grade retention, mainstreaming, referrals out of the program to meet special needs of the students, and withdrawals. A case history concludes the report.

Data for this profile were collected and analyzed using a variety of procedures, which are described in Appendix A following the text.
PROJECT DIRECTOR: Mrs. Joelle Dufresne
FUNDING CYCLE: Year 3 of 3

SITES

<table>
<thead>
<tr>
<th>High Schools</th>
<th>Borough</th>
<th>Grade Levels</th>
<th>Enrollment*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospect Heights</td>
<td>Brooklyn</td>
<td>9-12</td>
<td>(fall) 134 (spring) 113</td>
</tr>
<tr>
<td>George W. Wingate</td>
<td>Brooklyn</td>
<td>9-12</td>
<td>(fall) 162 (spring) 159</td>
</tr>
</tbody>
</table>

*The project enrolled 365 students (3 less than in the previous year), 271 of whom participated both semesters. Male students numbered 153, female 187; gender was not provided for 25. Students served totaled 296 in the fall and 272 in the spring.

STUDENT BACKGROUND

<table>
<thead>
<tr>
<th>Native Language</th>
<th>Number of Students</th>
<th>Countries of Origin</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haitian</td>
<td>287</td>
<td>Haiti</td>
<td>328</td>
</tr>
<tr>
<td>French</td>
<td>43</td>
<td>Mexico</td>
<td>9</td>
</tr>
<tr>
<td>Spanish</td>
<td>32</td>
<td>Dominican Republic</td>
<td>5</td>
</tr>
<tr>
<td>Unreported</td>
<td>3</td>
<td>Honduras</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unreported</td>
<td>15</td>
</tr>
</tbody>
</table>

Median Years of Education in Native Country: 8.0; in the United States: 3.0

Percentage of Students Eligible for Free Lunch Program: 89.0

ADMISSION CRITERIA

The project admitted students who scored at or below the 40th percentile on the Language Assessment Battery (LAB) and received the recommendation of the project's counselor. The project also considered teacher referrals and parent requests.

PROGRAMMING

Design Features

Project CAP was designed to provide Haitian- and Spanish-speaking students of limited English proficiency (LEP) with instruction in English as a Second Language (E.S.L.), Native Language Arts (N.L.A), and content area subjects taught bilingually. It also was to provide students with personal counseling, tutoring, and orientation to American education and culture. The design also included plans for parent outreach activities.
Strengths and Limitations

For the most part, Project CAP carried out those activities it had proposed in its design. Participating students received instruction in E.S.L. and N.L.A. and bilingual instruction in the content areas. Project CAP provided personal counseling, tutoring, and an orientation to American education and culture.

CONCLUSIONS AND RECOMMENDATIONS

As in the previous year, the project met its objectives for guidance and counseling, career conferences, and staff development and failed to meet objectives for E.S.L., N.L.A. in Haitian, and attitude toward school. A greater percentage of students showed gains on the LAB and passed N.L.A. courses in the current than in the previous year. Last year the project met its attendance objective at Prospect Heights High School only; this year it met it at both sites. The project met its objective for curriculum development. As in the previous year, OREA was unable to evaluate objectives for staff awareness of pupil needs and problems, and for parental involvement. Whereas last year the project did not meet the Spanish N.L.A. objective in either semester, this year it was successful in meeting it in the fall. Last year the project met its objective for field trips; this year it partially met it. Last year the project met the content area objective only in science and social studies in the spring; this year it met the objective at Prospect Heights High School for mathematics both semesters, science in the fall, and social studies in the spring. Last year Project CAP did not meet its dropout prevention objective; this year it did. Similarly, while last year OREA was unable to evaluate the cultural heritage objective, the project was successful in meeting it this year. The project appointed a new director for the 1992-93 year and plans to meet those objectives it had either failed to meet or only partially met.

The conclusions, based on the findings of this evaluation, lead to the following recommendations:

- Explore ways of increasing proficiency in English language skills, possibly by initiating peer tutoring or providing additional after-school remediation and computer-assisted instruction.

- Attempt to increase passing rates in N.L.A. and content area courses by increasing the use of a variety of techniques such as small group and individual instruction and peer tutoring, as well as by offering more materials to accommodate students' different learning styles.

- Coordinate field trips with the availability of transportation.

- Encourage the development of a positive change in student attitude toward school, possibly by having guidance counselors initiate group sessions to this end.

- Provide the data required to fully evaluate all program objectives.
PROGRAM ASSESSMENT

STAFFING

Title VII Staff (Total 5)

<table>
<thead>
<tr>
<th>Title</th>
<th>Degree</th>
<th>Language Competencies</th>
<th>Title VII Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Director</td>
<td>M.A.</td>
<td>French, Spanish, Haitian</td>
<td>Full time</td>
</tr>
<tr>
<td>Teacher Coordinator</td>
<td>B.S.</td>
<td>French, Haitian</td>
<td>Full time</td>
</tr>
<tr>
<td>Educational Assistant</td>
<td>H.S.</td>
<td>French, Haitian</td>
<td>Full time</td>
</tr>
<tr>
<td>Program Coordinator</td>
<td>B.A.</td>
<td>Haitian</td>
<td>Full time</td>
</tr>
<tr>
<td>Program Paraprofessional</td>
<td>B.A.</td>
<td>Haitian</td>
<td>Full time</td>
</tr>
</tbody>
</table>

Other Staff Working With Project Students (Total 25)

<table>
<thead>
<tr>
<th>Title</th>
<th>Degree</th>
<th>Certification</th>
<th>Language Competencies and Teaching/Communicative Proficiencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>21 M.A.</td>
<td>10 Mathematics</td>
<td>Haitian, TP 8</td>
</tr>
<tr>
<td>Teacher</td>
<td>4 M.S.</td>
<td>7 Bil. Soc. Stds.</td>
<td>Spanish, TP 6</td>
</tr>
<tr>
<td>Guidance Counselor</td>
<td>1 B.S.</td>
<td>3 Social Stds.</td>
<td>French, TP 7</td>
</tr>
<tr>
<td></td>
<td>2 B.A.</td>
<td>2 E.S.L.</td>
<td>Russian, TP 1</td>
</tr>
<tr>
<td></td>
<td>2 A.A.</td>
<td>2 French</td>
<td>German, TP 1, CP 1</td>
</tr>
<tr>
<td>High School</td>
<td>2</td>
<td>2 Speech</td>
<td>Italian, CP 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bus. Ed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Science</td>
<td></td>
</tr>
</tbody>
</table>

The project did not provide information on the qualifications of the guidance counselor.

IMPLEMENTATION AND OUTCOMES (Objectives prefaced by *)

English as a Second Language (E.S.L.)

E.S.L. CLASSES

<table>
<thead>
<tr>
<th>George Wingate High School</th>
<th></th>
<th>Prospect Heights High School</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Periods Weekly</td>
<td>Students Enrolled</td>
<td>Periods Weekly</td>
<td>Students Enrolled</td>
</tr>
<tr>
<td>Literacy</td>
<td>10</td>
<td>2</td>
<td>70</td>
</tr>
<tr>
<td>Beginning</td>
<td>10</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>Intermediate</td>
<td>5</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>Advanced</td>
<td>5</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>Transitional</td>
<td>5</td>
<td>2</td>
<td>35</td>
</tr>
</tbody>
</table>

E.S.L. instructors used computers and small groups to facilitate classroom lessons. Tutoring was provided by assistant teachers during scheduled periods as well as after school. For a list of instructional materials, see Appendix B.

*Teaching Proficiency (TP): Competent to teach in this language.
Communicative Proficiency (CP): Conversational capability only.
Seventy percent of target students will demonstrate an appropriate increase in English language proficiency as indicated by significant improvement.

Evaluation Instrument: Language Assessment Battery (LAB)*


Number of students for whom pre- and posttest data were reported: 246

Percent of students with pretest/posttest gains: 51.2

Mean gain: 5.3 N.C.E.s (s.d.=9.2)

Mean gain is statistically significant (t=9.04, p<.05).

Although the mean gain on the LAB was substantial as well as being statistically significant, only 51.2 percent of the students showed an appropriate increase in English proficiency as measured by a pretest/posttest gain on the LAB.

Project did not meet objective for E.S.L.

Native Language Arts (N.L.A.)

Students demonstrating lack of native language literacy skills (estimated): 90 percent.

N.L.A. CLASSES

<table>
<thead>
<tr>
<th>High School</th>
<th>Level</th>
<th>Periods Weekly</th>
<th>Language</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>George Wingate</td>
<td>Beginning</td>
<td>20</td>
<td>French</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>15</td>
<td>French</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>15</td>
<td>French</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Advanced Placement</td>
<td>15</td>
<td>French</td>
<td>25</td>
</tr>
<tr>
<td>Prospect Heights</td>
<td>Literacy</td>
<td>10</td>
<td>Haitian</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Beginning</td>
<td>10</td>
<td>French</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Intermediate</td>
<td>10</td>
<td>French</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Advanced</td>
<td>5</td>
<td>French</td>
<td>35</td>
</tr>
</tbody>
</table>

Only George W. Wingate High School offered Spanish N.L.A. The project did not provide information on the levels at which it was taught or on enrollment in those classes.

Teachers of N.L.A. implemented various instructional strategies, including dramatization of the subject matter, group learning, peer tutoring, individualized instruction, and hands-on activities. In addition, small group tutoring by the project coordinator or paraprofessional was available to students. For a list of instructional materials, see Appendix B.

*OREA used a gap reduction design to evaluate the effect of supplementary instruction on project students' performance on the LAB. Since all LEP students in New York City are entitled to such instruction, no valid comparison group exists among these students, and OREA used instead the group on which the LAB was normed. Test scores are reported in Normal Curve Equivalents (N.C.E.s), which are normalized standard scores with a mean of 50 and a standard deviation of 21.06. It is assumed that the norm group has a zero gain in N.C.E.s in the absence of supplementary instruction and that participating students' gains are attributable to project services.
Seventy-five percent of the Haitian Creole dominant participants will demonstrate a significant increase in Haitian Creole language achievement as indicated by significant improvement.

Seventy-five percent of the Spanish dominant participants will demonstrate a significant increase in Spanish language achievement as indicated by significant improvement.

Evaluation Instrument: final course grades.

### PASSING GRADES IN NATIVE LANGUAGE ARTS

<table>
<thead>
<tr>
<th>Language</th>
<th>Fall</th>
<th>Spring</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haitian</td>
<td>220</td>
<td>183</td>
<td>72.3</td>
<td>72.1</td>
</tr>
<tr>
<td>French</td>
<td>19</td>
<td>7</td>
<td>68.4</td>
<td>71.4</td>
</tr>
<tr>
<td>Spanish</td>
<td>17</td>
<td>17</td>
<td>88.2</td>
<td>64.7</td>
</tr>
</tbody>
</table>

Only in the fall in Spanish N.L.A. did over 75 percent of the students receive passing grades.

**Project partially met N.L.A. objective.**

### Content Area Subjects

Project CAP students took courses in mathematics, science, and social studies with a bilingual instructional approach. Content area subjects were taught five periods per week. The project used peer tutoring as an instructional strategy. Computer assistance was available in science, and paraprofessionals gave one-to-one assistance in the content areas as needed. For a list of instructional materials, see Appendix B.

- At least seventy percent of all targeted students will score at or above the passing criterion of 65 in the content areas of social studies, mathematics, and science.

Evaluation Indicator: final course grades.

### PASSING GRADES IN CONTENT AREAS

<table>
<thead>
<tr>
<th>High School</th>
<th>Subject</th>
<th>Fall Enrollment</th>
<th>Fall Percent Passing</th>
<th>Spring Enrollment</th>
<th>Spring Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>George W. Wingate</td>
<td>Mathematics</td>
<td>147</td>
<td>42.9</td>
<td>137</td>
<td>45.3</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>75</td>
<td>48.0</td>
<td>44</td>
<td>55.9</td>
</tr>
<tr>
<td></td>
<td>Social Science</td>
<td>137</td>
<td>54.7</td>
<td>139</td>
<td>50.4</td>
</tr>
<tr>
<td>Prospect Heights</td>
<td>Mathematics</td>
<td>129</td>
<td>75.5</td>
<td>99</td>
<td>78.8</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>101</td>
<td>63.4</td>
<td>80</td>
<td>70.0</td>
</tr>
<tr>
<td></td>
<td>Social Studies</td>
<td>112</td>
<td>69.6</td>
<td>88</td>
<td>63.6</td>
</tr>
</tbody>
</table>

The project met this objective only at Prospect Heights High School in mathematics both semesters, science in the spring, and social studies in the fall.

**Project partially met content area subjects objective.**
Attendance

The bilingual guidance counselor interviewed program students who showed poor attendance to determine the cause and to discuss possible solutions. Targeted students were referred to dropout prevention programs such as the N.Y.U. Stay-in-School Partnership.

- As a result of participating in the program, students' attendance will be significantly higher than that of mainstream students.

Evaluation Indicator: student records.

**ATTENDANCE RATES**

<table>
<thead>
<tr>
<th>High School</th>
<th>Project Students</th>
<th>Mainstream Students</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>George W. Wingate</td>
<td>91.2</td>
<td>80.8</td>
<td>10.4*</td>
</tr>
<tr>
<td>Prospect Heights</td>
<td>95.4</td>
<td>74.9</td>
<td>20.5*</td>
</tr>
</tbody>
</table>

*p < .05

Project met the attendance objective.

Last year, the attendance rate of participating students was 76.6 percent at George W. Wingate High School and 88.9 percent at Prospect Heights High School. Both schools showed an improvement in the current year.

Dropout Prevention

- Program students will have a significantly lower dropout rate than similar non-program students.

Evaluation Indicator: student records.

**DROPOUT RATES**

<table>
<thead>
<tr>
<th>High School</th>
<th>Project Students</th>
<th>Mainstream Students</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>George W. Wingate</td>
<td>0.0</td>
<td>4.0</td>
<td>4.0*</td>
</tr>
<tr>
<td>Prospect Heights</td>
<td>0.7</td>
<td>7.3</td>
<td>6.6*</td>
</tr>
</tbody>
</table>

*p < .05

Project met the dropout prevention objective.

Curriculum Development

- By the third project year the curriculum specialist will have developed or translated one subject matter oriented instructional unit for teaching E.S.L., science, and social studies.

Evaluation Indicator: project records.

Instructional units were adopted and implemented from the Curriculum of the Central Programs Unit of Title VII. These units included science, social studies, mathematics, E.S.L., and N.L.A.

Project met the curriculum development objective.
Cultural Heritage

- Seventy-five percent of all target students will demonstrate an improvement in attitude toward cultural heritage.

Evaluation Indicator: attendance at one or more cultural event, activity, or trip.

All project students at Prospect Heights and George Wingate celebrated Haitian Flag Day, performed native Latino dances at an assembly, and visited the United Nations.

Project met the cultural heritage objective.

Attitude Toward School

- Seventy-five percent of all target students will demonstrate an improvement in attitude toward school.

Evaluation Instrument: OREA-developed 5-point Likert scale to measure interest in continuing education beyond the 11th grade.

Data were available for 211 students. Of those, 65.9 indicated an improvement in attitude toward school.

Project did not meet the objective for improved attitude toward school.

Field Trips

- The program will organize at least two field trips for the targeted students at the two high school sites to historical museums and the United Nations, White House etc., to increase their familiarity with American culture and citizenship.

Evaluation Indicator: program records.

At Prospect Heights High School, students visited the Brooklyn Museum and the Brooklyn Public Library, where they obtained their own library cards. At George Wingate High School, the students visited the United Nations. Other trips were scheduled but had to be canceled because dates on which transportation could be arranged were unavailable.

Project partially met field trips objective.

Guidance and Counseling

- All graduating students will meet with the bilingual career specialists/bilingual guidance counselor for advisement at least three times during the school year.

Evaluation Indicator: program records.

The bilingual counselor met with all graduating students three times during the school year. In addition, the counselor reviewed the records of graduating students to ensure that they had met all requirements for graduation and scheduled follow-up interviews.

Project met guidance and counseling objective.
Career Conferences

- The program will organize at least one conference for students in which representatives of business and industry will present information on career options and skill requirements.

Evaluation Indicator: program records.

The program participated in a Career Week event organized by the school. During this week, professionals came to speak to students about career opportunities and requirements.

Project met career conference objective.

Enrollment in Post-secondary Institutions

Thirty-eight of the 71 graduating students (53.5 percent) reported an interest in enrolling in post-secondary institutions.

Students With Special Academic Needs

Referral to special education. If students were viewed as requiring special education services, they were referred to the School-based Support Team (S.B.S.T.) for interviewing and testing. While no member of the S.B.S.T. spoke Haitian, someone who spoke the language was available to assist in the evaluation. In the current year, no students were referred to special education programs. In the previous year, two students were referred.

Remedial programs. As in the previous year, no students were referred to remedial programs.

Gifted and talented programs. As in the previous year, no students were referred to programs for the gifted and talented.

Mainstreaming

Project CAP mainstreamed one student (0.3 percent of participants). In the previous year, the project had mainstreamed seven students (1.9 percent of participants).

Academic achievement of former project students in mainstream. The project did not provide information on the academic achievement of formerly-served now mainstreamed students.

Staff Development

- Fifty percent of program staff will enroll in at least one university course each semester.

Evaluation Indicator: program records

Four of the five Title VII-funded staff (80 percent) enrolled in college courses in the fall and spring semesters.

Project met staff development objective for enrollment in college courses.
- Eighty percent of the staff in the program will demonstrate an increase in awareness of pupil needs and problems.

Evaluation Instrument: OREA-developed 5-point Likert scale of pupil needs and problems.

The project did not submit the questionnaires to OREA.

OREA was unable to evaluate staff development objective for awareness of pupil needs and problems.

Parental Involvement

- The proportion of program parents who participate in Open School Day/Evening will be equal to or greater than the proportion of mainstream students parents who participate in this activity.

Evaluation Indicator: program and school activity records.

The program organized a Parent Advisory Council (PAC), which met once a month. The program also organized Parent-Teacher Association (P.T.A.) meetings for parents of participating students. Prospect Heights High School provided E.S.L. and basic mathematics classes for parents of project students at both sites. Twenty-five parents enrolled, and 20 actively attended two times a week. The courses began in January and ran through June.

The project director was unable to provide Open School Day/Evening attendance rates for project or mainstream parents.

OREA was unable to evaluate parental involvement objective.

CASE HISTORY

The project did not provide a case history.
APPENDIX A

DATA COLLECTION AND ANALYSIS

COLLECTION

OREA evaluation consultants visit sites and interview key personnel. The project director gathers data and, with the consultant, completes forms (as shown below) as necessary.

Student Data Form

This one-page form is filled out by staff for each participating and mainstreamed student. OREA gathers data from this form on backgrounds, demographics, academic outcomes, attendance, referrals, and exit from the program.

Project Director's Questionnaire

The Project Director's Questionnaire includes questions on staff qualifications, program implementation, periods of instruction, and instructional materials and techniques.

Project Director's Interview

The interview gathers information on program and student or staff characteristics not supplied by the Project Director's Questionnaire. The interview also allows project staff to offer qualitative data or amplify responses to the questionnaire.

Citywide Test Scores

OREA retrieves scores centrally from the Language Assessment Battery (LAB) and other citywide tests. For evaluation purposes, these test scores are reported in Normal Curve Equivalents (N.C.E.s). N.C.E.s are normalized standard scores with a mean of 50 and a standard deviation (s.d.) of 21.06. They constitute an equal-interval scale in which the distance is the same between any two adjacent scores. A gain of 5 N.C.E.s is the same whether it is at the lower or the higher end of the scale. N.C.E.s can be used in arithmetic computations to indicate group progress. (Percentile scales, although more familiar to many, are unsuitable for such computations since they are not equal-interval.)

Likert-Type Surveys

Likert-type surveys, in which respondents mark their opinions on a scale from one to five, are used in a variety of ways. They examine student attitudes (i.e., toward school and career, native language use, and native and mainstream cultures). They also assess staff and parent attitude and reactions to workshops and other activities.

ANALYSIS

Gap Reduction Evaluation Design

OREA uses a gap reduction design for measuring changes in standardized tests. Since no appropriate non-project comparison group is available in New York City, where all students of limited English proficiency (LEP) are entitled to receive supplementary services, OREA compares the progress of participating students with that of the group on which the test was normed. It is assumed that the norm group would show a zero gain in the absence of instruction, and gains made by project students could be attributed to project services. Scores are reported in Normal Curve Equivalents (N.C.E.s), which are normalized standard scores with a mean of 50 and a standard deviation of 21.06. (See "Citywide Test Scores" above.)

To test whether pre/posttest gains are greater than could be expected by chance alone, OREA uses a t-test. To test whether a difference between two proportions (e.g., program and mainstream attendance rates) is
greater than could be expected by chance, OREA uses a z-test and reports the differences between the two proportions. The level of significance is set at .05 for all tests.

Techniques For Minimizing Error

The evaluation procedures minimize error by providing for proper administration of evaluation instruments through a combination of testing at 12-month intervals, appropriate analysis procedures and reporting.

Instruments of measurement include the LAB (see above), the Degrees of Reading Power (D.R.P.) test, the Metropolitan Achievement Test--Mathematics (MAT-Math), El Examen de Lectura en Español (ELE), Likert-type scales (see above), and project-developed tests. Except for Likert scales and project-developed tests, these instruments are scored on a citywide basis at the Scan Center of the New York City Public Schools.
APPENDIX B

INSTRUCTIONAL MATERIALS

E.S.L.

*E.S.L. in the Content Areas* by High School Bilingual/E.S.L. Programs, published by the New York City Public Schools.
*Graded Experiences in English* by Robert J. Dixon, published by Prentice Hall.

N.L.A.

*Map Li Ak Ke Kontan III and IV* by F.I.C., published by Henri Dechamps.
*Ann Apran Otograf Kreyol La* by Iv DeJean, published by K.A. P.A.B.

Mathematics

*Presnip De Bae Nan Matematik* by Title VII, published by the New York City Public Schools.
*Achieving Competence in Math* by Mathew Mandery, published by Amsco.

Science

*Africa* by Laurence Palline, published by Globe Book Co.