DOCUMENT RESUME

ED 349 425 CE 061 924

TITLE	The New York City Adult Literacy Initiative. Analysis of New York City's 1989-1990 Adult Literacy Data Base.
INSTITUTION	Metis Associates, Inc., New York, N.Y.
SPONS AGENCY	Literacy Assistance Center, New York, NY.; New York City Mayor's Office of Educational Services, NY.; New York State Education Dept., Albany.
PUB DATE	Oct 91
NOTE	62p.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Academic Achievement; *Adult Basic Education; Adult Literacy; Adult Programs; Comparative Analysis; Demography; *English (Second Language); Ethnic Groups; Females; Immigrants; Individual Characteristics; *Literacy Education; Statistical Analysis; *Student Characteristics; Welfare Recipients
IDENTIFIERS	*New York (New York)

ABSTRACT

A statistical analysis was conducted of the New York City adult literacy database for program year 1989-90. Data included extensive information on enrollees in city- and state-funded classroom and tutorial programs throughout the city, as well as information on hours of instruction received and students' achievement test results. Demographic and achievement findings for 1989-90 indicated the following: the population was 61 percent female and 49.5 percent Hispanic; mean age was 36.0 years; 47.9 percent were employed full time; 20.9 percent received public assistance; over 60 percent of the residents of each borough attended programs in the same borough; and 54.4 percent attended class in evenings. The average basic education student gained 9.1 months on the Test of Adult Basic Education, after 112.3 hours of contact. Data showed average John Test raw score gains among participants in English for Speakers of Other Languages of 15.3 points, after 108.1 hours of contact. Comparative studies contrasted results of 1985-86, 1986-87, 1987-88, and 1988-89 analyses with those obtained from the 1989-90 file. The current population was found to be older, more likely to be employed, and with fewer basic skills. Longitudinal analyses determined the demographic characteristics of students who participate for more than 1 year and the long-term effects of program participation. More of these students were women and immigrants who entered programs at low achievement levels. (47 data tables) (YLB)

The New York City Adult Literacy Initiative

Analysis of New York City's 1989 – 1990 Adult Literacy Data Base

prepared for
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by
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October 1991

This report was prepared under a contract with the New York City Mayor's Office of Education Services, the City of New York, and the New York State Education Department, as part of the support service component of the New York City Adult Literacy Initiative.

Analysis of New York City's 1989-1990
Adult Literacy Data Base

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Analysis of New York City's 1989-1990 Adult Literacy Data Base

I. Introduction

A. Purpose

This report presents the results of a statistical analysis of the New York City adult literacy data base for program year 1989-1990. The data presented are derived from a citywide unit-record data base that includes extensive demographic information on enrollees in city- and state-funded classroom and tutorial programs throughout the city, as well as information on the hours of instruction received by each student, students' achievement test results, and other selected impact data. Examination of such information enhances our understanding of the diverse population of adults who attend literacy programs (both Basic Education [BE] and English for Speakers of Other Languages [ESOL]) in New York City and the results of their participation in these programs. Since the data base has been in existence for a number of years, comparisons with data from previous program years are also presented. In addition, since participating students maintain a unique identification number, the data base permits us to identify students who continue their instruction over years and to analyze separately their demographic characteristics and performance over time.

The New York City adult literacy data base is, by far, more complex and complete than any other currently in existence in the adult literacy field. The demographic and outcome data contained in the data base provide an extremely rich source of information about adult literacy programs and about adult learners. Since adult literacy programs are currently expanding rapidly, it is important that program growth and development be nurtured by a systematic and critical review of relevant data. The project described in this report is an important step in that direction.

B. Background

The New York City Adult Literacy Initiative is presently comprised of the New York City Public Schools (NYCPS), the City University of New York (CUNY), the Community Development Agency (CDA), and the three New York City library systems (New York, Queens and Brooklyn). Each of these literacy provider agencies (LPAs) oversees the operation of various instructional programs designed to improve basic skills among adults and older youth. In addition, the Literacy Assistance Center (LAC), as part of the Initiative, provides centralized support services to the LPAs.

The various programs overseen by the LPAs all submit demographic and impact data on their enrollees, as well as certain program data (e.g., class schedules), for entry into a computerized management information system. Currently, the citywide management information system has two major components - the NYCPS's mainframe system and the micro-computer based Adult Literacy Information and Evaluation System (ALIES) which supports the information processing needs of community-based organizations (CBOs) funded through CDA, CUNY

campuses and libraries[1]. These two subsystems contain almost identical data elements, and make use of generally consistent definitions. All student and program data from these systems are combined at the end of each program year into the city's adult literacy data base. The data are also utilized by each NYCPS region, CUNY campus, or community-based organization to produce required reports and to assist in various program management functions.

During fiscal year 1987, Metis Associates, Inc. was retained by the Literacy Assistance Center, Inc. to create a concatenated research file and conduct a comprehensive analysis of data derived from the first full year of citywide system implementation (i.e., July 1, 1985 through June 30, 1986). The analysis involved a wide array of demographic as well as outcome data, and stimulated a great deal of interest within the adult literacy community. As a result, similar analyses were run on the data for the 1986-1987, 1987-1988 and 1988-1989 program years, the second, third and fourth years of uniform citywide data collection. The 1986-1987 analyses included comparisons between the first two program years; the 1987-1988 analyses included comparisons among the first three program years; and the 1988-1989 analyses included comparisons among the first four program years[2].

This report describes the results of the statistical analyses for the fifth program year, 1989-1990, including demographic and outcome data, comparisons of the first through fifth program years, and results of various longitudinal analyses.

II. Methodology

Metis Associates, Inc. and the Literacy Assistance Center, Inc. met with an advisory committee of representatives from the LPAs and the New York State Education Department to review and discuss the analytic implications of the previous studies and to develop specifications for a comprehensive within-year analysis for the 1989-1990 citywide data base and for five-year comparative and longitudinal analyses.

A unified data base for research purposes, which combined needed information from the 1989-1990 NYCPS and ALIES files, was created. The specific steps followed in the creation of the unified data base have been described elsewhere (see, for example, Analysis of New York City's 1986-1987 Adult Literacy Data Base, Metis Associates, 1988).

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[1] The New York Public Library maintains data on all its students through the ALIES system. The Queens Public Library submits data on students in classroom instruction for entry into the ALIES system. Data on students receiving tutorial instruction at the Queens Public Library are maintained separately and are reported to funders in aggregate form only. The Brooklyn Public Library, which serves students entirely in individual tutorial or small group instruction, uses the same procedures. These data are not, therefore, included in the citywide data base.

[2] Reports on the major findings from all of these analyses are available upon request from the Literacy Assistance Center. Printed cross-tabulations from each year's analyses are available for examination at the LAC.

The specified analyses were executed and reviewed in March 1991 by the LAC, Metis Associates, and the advisory committee[3]. The purposes of the review were to:

- disseminate findings to the field in a timely manner;
- engage the advisory committee in discussions about additional analyses; and
- develop a consensus about issues to be addressed in this report of findings.

The advisory committee recommended that the current report emphasize demographic information obtained from the within-year (1989-1990), over years and longitudinal analyses, and that less emphasis should be placed on academic achievement results and other program outcomes included in the data base[4]. In particular, the committee was interested in the following issues:

- the relationships between demographic characteristics and participants' employment and public assistance status;
- participants' commuting patterns based on the relationships between their boroughs of residence and their boroughs of program instruction.
- adult literacy data for basic education students who received their elementary and secondary schooling in the United States.

Following the recommendations of the advisory committee, this report presents selected findings from the relevant analyses. However, it should be borne in mind that there is a great deal of additional information contained within the full set of analyses produced for this project. The additional tables are available for examination at the Literacy Assistance Center, Inc.

[3]A listing of all of the tables of data that were executed and transmitted to the LAC and to the advisory committee is available from the Literacy Assistance Center.

[4]The achievement data in the data base are of pre- and post scores on standardized tests. Since there is considerable debate as to whether these are good measures of achievement, emphasis was not placed on them in this report.

III. Findings

Demographic and achievement findings are summarized for within-year (1989-90), over years (1985-86 through 1989-90), and longitudinal (students enrolled in two or three consecutive program years) analyses[5].

A. Within-Year (1989-90): Demographic Findings

The concatenated file contains records for 56,082 students. Of these students, 20,731 or 37.0 percent were enrolled in BE, and 35,351 or 63.0 percent were enrolled in ESOL. Demographic data are presented for total students (BE and ESOL combined), for BE students only, and for ESOL students only[6].

1. Gender

Data on gender were obtained for 97.1 percent of the students in the 1989-90 file. Table 1 summarizes these data for total students, BE students, and ESOL students. Over 60 percent of the total participants were female and 39.0 percent were male. The gender composition of the BE and ESOL populations were generally consistent with that of the total population.

Table 1
Student Gender

Gender	TOTAL		BE		ESOL	
	N	%	N	%	N	%
Female	33,201	61.0	12,710	63.2	20,491	59.6
Male	21,258	39.0	7,390	36.8	13,868	40.4

[5] Since the patterns of missing data appear to be random, percentages reported in each of the tables throughout the findings section are based on 100% of the respondents with non-missing data.

[6] A very small proportion (less than 5%) of all students enrolled in the programs of the New York City Adult Literacy Initiative attend Basic Education in the Native Language (BENL) instruction, in either Spanish or Haitian Creole. These classes serve non-English speakers who lack literacy skills in their native language. They are not included in the analyses described here and *total students* refers to BE and ESOL combined. A separate set of analyses will be run and a report on BENL students, their needs, and the services provided to them is currently being produced by the LAC.

2. Ethnicity

Data were obtained for 96.6 percent of the population. It can be seen in Table 2 that nearly half of the students were Hispanic (49.5 percent). Approximately one-fourth were black (27.0 percent) and approximately one-fourth were either American Indian (0.2 percent), Asian (11.3 percent) or white (11.9 percent). The majority of the BE student population was black (57.8 percent), while the majority of the ESOL student population was Hispanic (61.9 percent). More than one-fourth of the BE student population (28.3 percent) was Hispanic. White students comprised 8.0 percent, Asian students comprised 5.5 percent and American Indian students comprised 0.4 percent of the BE population. In contrast, the ESOL population had a larger percentage of Asians (14.8 percent) and white students (14.1 percent) than the BE population and a smaller percentage of black (9.1 percent) and American Indian (0.1 percent).

Table 2
Student Ethnicity

Ethnicity	TOTAL		BE		ESOL	
	N	%	N	%	N	%
American Indian	128	0.2	81	0.4	47	0.1
Asian	6,147	11.3	1,096	5.5	5,051	14.8
Black	14,651	27.0	11,525	57.8	3,126	9.1
Hispanic	26,820	49.5	5,651	28.3	21,169	61.9
White	6,421	11.9	1,603	8.0	4,818	14.1

3. Age

Participants' ages, which were derived from their respective birth dates, were obtained for 99.6 percent of the students. Table 3 shows that nearly 80 percent of the students were between 22 and 49 years of age (79.3 percent). On average, students enrolled in BE were three years younger than students enrolled in ESOL (34.1 years versus 37.1 years, respectively).

Table 3
Student Age

Age	TOTAL		BE		ESOL	
	N	%	N	%	N	%
17 or less	109	0.2	55	0.3	54	0.2
18 - 21	4,004	7.2	2,356	11.4	1,648	4.7
22 - 29	14,252	25.5	6,009	29.1	8,243	23.4
30 - 39	18,734	33.5	6,280	30.4	12,454	35.3
40 - 49	11,338	20.3	3,692	17.9	7,646	21.7
50 - 59	5,454	9.7	1,688	8.2	3,766	10.7
60 and above	1,970	3.5	544	2.7	1,426	4.0
Mean age	36.0		34.1		37.1	

4. Program Borough

Program boroughs (that is, the boroughs in which students attended class) were assigned to the file on a class-by-class basis. Of the 56,082 students, program boroughs were successfully assigned to 54,039 or 96.4 percent. It can be seen in Table 4 that, by far, the largest percentage of students attended programs in Manhattan -- 44.1 percent for the total population, 38.3 percent for BE students, and 47.5 percent for ESOL students. Approximately the same percentage of students attend classes in Brooklyn (20.2 percent) and Queens (19.4 percent), followed by the Bronx (14.9 percent) and Staten Island (1.4 percent).

Table 4
Student Program Borough

Program Borough	TOTAL		BE		ESOL	
	N	%	N	%	N	%
Bronx	8,076	14.9	3,783	18.8	4,293	12.7
Brooklyn	10,921	20.2	4,514	22.4	6,407	18.9
Manhattan	23,805	44.1	7,721	38.3	16,084	47.5
Queens	10,476	19.4	3,802	18.8	6,674	19.7
Staten Island	761	1.4	354	1.8	407	1.2

5. Borough of Residence

A distribution of student residences by borough was developed using zip codes from student addresses. Of the 56,082 students, borough of residence was derived for 42,702, or 76.1 percent.

Table 5
Student Borough of Residence

Borough of Residence	Percent of Total NYC Population	TOTAL		BE		ESOL	
		N	%	N	%	N	%
Bronx	16.4	8,885	20.8	4,188	25.8	4,697	17.8
Brooklyn	31.4	14,356	33.6	5,676	34.9	8,680	32.8
Manhattan	20.3	9,018	21.1	2,856	17.6	6,162	23.3
Queens	26.7	9,738	22.8	3,197	19.7	6,541	24.7
Staten Island	5.2	705	1.7	343	2.1	362	1.4

Table 5 shows that the residential composition of the student populations are roughly consistent with the residential composition of New York City's population according to the 1990 census. However, the Bronx had a higher percentage of participants in the total student population (20.8 percent) than residents in the total New York City population (16.4 percent) and Staten Island had a lower percentage of participants in the total student population (1.7 percent) than residents in the total New York City population (5.2 percent).

By comparing the residential compositions of the BE and ESOL participants, one can see that the BE population had a higher percentage of students from the Bronx (25.8 percent) than the ESOL population (17.8 percent), and that the ESOL population had a higher percentage of students from Manhattan (23.3 percent) and Queens (24.7 percent) than the BE population (17.6 percent and 19.7 percent, respectively). The BE and ESOL student populations had approximately equal percentages of students from Brooklyn and Staten Island.

6. Commuting patterns

Commuting patterns were analyzed by cross-tabulating student residential zip codes with the locations of their program sites. Data were obtained for 73.4 percent of the total number of participants. The cross-tabulations in Table 6 show the distribution of students' borough of residence in relation to where they attended programs.

Table 6a - Total Student Population
Student Commuting Patterns

Borough of Residence	Program Borough					
	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
Bronx	6,164 70.4%	54 0.6%	2,408 27.5%	104 1.2%	23 0.3%	8,753 100.0%
Brooklyn	138 1.1%	8,590 65.4%	4,115 31.3%	293 2.2%	8 0.1%	13,137 100.1%
Manhattan	245 2.7%	79 0.9%	8,432 94.6%	152 1.7%	3 0.0%	8,911 99.9%
Queens	116 1.2%	246 2.5%	1,986 20.5%	7,326 75.7%	2 0.0%	9,676 99.9%
Staten Island	5 0.7%	6 0.9%	107 15.3%	2 0.3%	579 82.8%	699 100.0%
Total	6,668 16.2%	8,975 21.8%	17,048 41.4%	7,870 19.1%	615 1.5%	41,176 100.0%

Table 6b - BE Student Population
Student Commuting Patterns

Borough of Residence	Program Borough					
	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
Bronx	2,740 65.5%	35 0.8%	1,310 31.3%	73 1.7%	23 0.6%	4,181 100.0%
Brooklyn	125 2.3%	3,421 64.1%	1,624 30.4%	161 3.0%	5 0.1%	5,336 100.0%
Manhattan	102 3.6%	25 0.9%	2,654 92.9%	75 2.6%	0 0.0%	2,856 100.0%
Queens	92 2.9%	76 2.4%	370 11.6%	2,655 83.1%	1 0.0%	3,194 100.0%
Staten Island	3 0.9%	1 0.3%	46 13.6%	0 0.0%	289 85.3%	339 100.0%
Total	3,062 19.3%	3,558 22.4%	6,004 37.7%	2,964 18.6%	318 2.0%	15,906 100.0%

Table 6c - ESOL Student Population
Student Commuting Patterns

Borough of Residence	Program Borough					
	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
Bronx	3,424 74.9%	19 0.4%	1,098 24.0%	31 0.7%	0 0.0%	4,572 100.0%
Brooklyn	13 0.2%	5,169 66.3%	2,491 31.9%	125 1.6%	3 0.0%	7,801 100.0%
Manhattan	143 2.4%	54 0.9%	5,778 95.4%	77 1.3%	3 0.0%	6,055 100.0%
Queens	24 0.4%	170 2.6%	1,616 24.9%	4,671 72.1%	1 0.0%	6,482 100.0%
Staten Island	2 0.6%	5 1.4%	61 16.9%	2 0.6%	290 80.6%	360 100.0%
Total	3,606 14.3%	5,417 21.4%	11,044 43.7%	4,906 19.4%	297 1.2%	25,270 100.0%

The data in Table 6a show that for the 76.1 percent of the students for whom information was obtained, well over half of the students in every borough attended programs in that borough: 70.4 percent of Bronx residents attended in the Bronx, 65.4 percent of Brooklyn students attended in Brooklyn, 94.6 percent of Manhattan residents attended in Manhattan, 75.7 percent of Queens residents attended in Queens, and 82.8 percent of Staten Island residents attended in Staten Island. Substantial numbers of students from the Bronx (27.5 percent), Brooklyn (31.3 percent), Queens (20.5 percent) and Staten Island (15.3 percent) attended classes in Manhattan.

BE and ESOL commuting patterns are each generally consistent with the patterns of the total student population. However, Tables 6b and 6c show that Bronx BE students were more likely to commute to Manhattan (31.3 percent) than Bronx ESOL students (24.0 percent), and both Queens and Staten Island BE students were more likely to attend classes in their borough of residence (83.1 percent and 85.3 percent, respectively) than Queens and Staten Island ESOL students (72.1 percent and 80.6 percent, respectively).

7. Program Time

Classes were offered in all boroughs during the daytime and in the evening to accommodate students' schedules. Data for class schedules were obtained for 96.7 percent of the total student population. Table 7 shows that more BE students attended class during the daytime (56.2 percent) than in the evening (43.8 percent), while more ESOL students attended classes in the evening (60.6 percent) than during the daytime (39.4 percent).

Table 7
Program Status by Time of Day Attending Class

Time of Class	TOTAL		BE		ESOL	
	N	%	N	%	N	%
Day	24,700	45.6	11,194	56.2	13,506	39.4
Evening	29,513	54.4	8,730	43.8	20,783	60.6

a. Demographic characteristics by time of day attending class

Cross-tabulations of the time of day students attend class with other demographic characteristics were performed to highlight the differences between these two groups of students. The most important cross-tabulations are presented in this report. The complete set of cross-tabulations may be examined at the Literacy Assistance Center[7].

Gender. Tables 8a and 8b show participants' gender in relation to the time of day they attended classes for BE and ESOL students, respectively. Data were obtained for approximately 97.0 percent of the student population. While in the total student population over 63 percent of the BE participants were female and nearly 37 percent were male, the data in Table 8a indicate that female BE students comprised nearly 69.9 percent of the daytime student population, but only 55.3 percent of the evening student population; male students comprised only 30.1 percent of the daytime student population, but 44.7 percent of the evening student population. As in the total population, female students were in the majority in both the morning and evening student populations.

Table 8a - BE Students
Time of Day Attending Class by Gender

Gender	Daytime Students		Evening Students	
	N	%	N	%
Female	7,566	69.9	4,684	55.3
Male	3,261	30.1	3,782	44.7

[7]Other cross-tabulations include time of day by: immigrant status, separation status, mean number of contact hours, enrollment date, entry level scores on the TABE or John; and highest grade completed.

While approximately 60 percent of the total ESOL participants were female and approximately 40 percent were male, female students comprise 67.9 percent of the daytime ESOL student population, but only 54.6 percent of the evening population; male students comprise only 32.1 percent of the daytime student population, but 45.4 percent of the evening student population.

Table 8b - ESOL Students
Time of Day Attending Class by Gender

Gender	Daytime Students		Evening Students	
	N	%	N	%
Female	8,909	67.9	11,021	54.6
Male	4,217	32.1	9,155	45.4

Since a higher percentage of male students are full-time employed (for both BE and ESOL) than female students, and since 75.6 percent of the full-time employed BE students and 79.0 percent of the full-time employed ESOL students are evening students, it is not suprising that male students comprise a larger percentage of the total evening student population than of the total student population, and that female students (who are less likely to be employed full-time) comprise a larger percentage of the total daytime student population than of the total student population.

Ethnicity. BE and ESOL participants' ethnicity in relation to the time of day they attended class is exhibited in Tables 9a and 9b, respectively. Data were obtained for approximately 96 percent of the total population.

Table 9a - BE Students
Time of Day Attending Class by Ethnicity

Ethnicity	Day		Evening	
	N	%	N	%
American Indian	34	0.3	43	0.5
Asian	722	6.7	365	4.4
Black	6,068	56.3	5,018	59.8
Hispanic	3,259	30.3	2,101	25.0
White	686	6.4	861	10.3
Total	10,769	100.0	8,388	100.0

Table 9b - ESOL Students
Time of Day Attending Class by Ethnicity

Ethnicity	Day		Evening	
	N	%	N	%
American Indian	15	0.1	32	0.2
Asian	2,205	16.9	2,693	13.4
Black	864	6.6	2,138	10.7
Hispanic	7,869	60.2	12,767	63.6
White	2,124	16.2	2,442	12.2
Total	13,077	100.0	20,072	100.1

For both BE and ESOL programs, the ethnic compositions of both daytime and evening students were generally consistent with the ethnic compositions of the total BE and ESOL student populations. A higher percentage of Asian students attended programs in the daytime than in the evening (6.7 percent versus 4.3 percent for BE and 16.9 percent versus 13.4 percent for ESOL). A lower percentage of black students attended programs in the daytime than in the evening (56.3 percent versus 59.8 percent for BE and 6.6 percent versus 10.7 percent for ESOL). A higher percentage of Hispanic BE students attended daytime programs than evening programs (30.3 percent versus 25.0 percent), but a lower percentage of Hispanic ESOL students attended daytime programs than evening programs (60.4 percent versus 63.6 percent). On the other hand, a lower percentage of white BE students attended daytime programs than evening programs (6.4 percent versus 9.9 percent), but a higher percentage of white ESOL students attended daytime programs (16.2 percent versus 12.2 percent). Approximately equal percentages of American Indian students attended daytime and evening programs.

As is the case with gender, the variation in time of day attending class by ethnicity is generally consistent with the pattern of employment by ethnicity: the full-time employed are more likely to attend class during the evening.

Age. On the whole, there were no significant differences between daytime and evening students for BE with respect to age. However, a lower percentage of ESOL students aged 22-29 attended daytime classes (19.7 percent) than evening classes (25.9 percent), and a higher percentage of ESOL students aged 40-49 attended daytime classes (24.1 percent) than evening classes (20.1 percent).

Table 10a - BE Students
Time of Day Attending Class by Age

Age	Daytime		Evening	
	N	%	N	%
17 or less	41	0.4	14	0.2
18-21	1,386	12.5	891	10.2
22-29	3,135	28.2	2,651	30.5
30-39	3,401	30.6	2,594	29.8
40-49	1,952	17.5	1,612	18.5
50-59	913	8.2	720	8.2
60+	297	2.7	223	2.6

Table 10b - ESOL Students
Time of Day Attending Class by Age

Age	Daytime		Evening	
	N	%	N	%
17 or less	22	0.2	29	0.1
18-21	599	4.4	976	4.7
22-29	2,650	19.7	5,361	25.9
30-39	4,847	36.0	7,267	36.2
40-49	3,248	24.1	4,170	20.1
50-59	1,472	10.9	2,153	10.4
60+	629	4.7	754	3.6

Commuting patterns. Cross-tabulations for students' borough of residence by the borough where they attended programs are presented in Table 11a for day students and in Table 11b for evening students. These cross-tabulations reveal that, for all boroughs except Manhattan, a higher percentage of evening students attended programs in their borough of residence than daytime students: 76.6 percent of the evening students and 68.0 percent of the day students living in the Bronx attended programs in the Bronx; 74.1 percent of the evening students and 60.1 percent of the daytime students living in Brooklyn attended programs in Brooklyn; 84.8 percent of the evening students and 66.9 percent of the daytime students in Queens attended programs in Queens; and 91.9 percent of the evening students and 71.8 percent of the daytime students in Staten Island attended class in Staten Island. Correspondingly, a higher percentage of students from all boroughs attended programs in Manhattan during the daytime than during the evening.

Table 11a - Daytime Students
Student Commuting Patterns

Borough of Residence	Program Borough					
	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
Bronx	3,119 68.0%	15 0.3%	1,393 30.4%	56 1.2%	1 0.0%	4,584 99.9
Brooklyn	126 2.1%	3,692 60.1%	2,194 35.7%	125 2.0%	1 0.0%	6,138 100.0
Manhattan	111 2.7%	26 0.6%	3,965 95.4%	51 1.2%	2 0.0%	4,155 99.9
Queens	83 2.0%	67 1.7%	1,192 29.4%	2,711 66.9%	1 0.0%	4,054 100.0
Staten Island	3 1.1%	0 0.0%	75 26.4%	2 0.7%	204 71.8%	284 100.0
Total	3,442 17.9%	3,800 19.8%	8,819 45.9%	2,945 15.3%	209 1.1%	19,215 100.0%

Table 11b - Evening Students
Student Commuting Patterns

Borough of Residence	Program Borough					
	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
Bronx	2,906 76.6%	39 1.0%	800 21.1%	46 1.2%	1 0.0%	3,792 99.9%
Brooklyn	10 0.2%	4,683 74.1%	1,463 23.1%	157 2.5%	7 0.1%	6,320 100.0%
Manhattan	115 2.7%	52 1.2%	4,001 93.8%	97 2.3%	1 0.0%	4,266 100.0%
Queens	31 0.6%	166 3.1%	626 11.6%	4,583 84.8%	1 0.0%	5,407 100.1%
Staten Island	2 0.5%	6 1.5%	25 6.1%	0 0.0%	375 91.9%	408 100.0%
Total	3,064 15.2%	4,946 24.5%	6,915 34.2%	4,883 24.2%	385 1.9%	20,193 100.0%

Student commuting patterns have implications for program management. Part-time students are most likely to attend programs in Manhattan. Are more programs offered in Manhattan during the day because many part-time students work in Manhattan? Or, are a higher percentage of students attending daytime Manhattan programs because there are more programs available at that time and location? Students not available for employment are more likely to attend programs in their borough of residence. Do the ones who live in outer boroughs lose out if more programs are offered in Manhattan? Daytime students are less likely to be employed full-time. Even though they may have more time to commute to other boroughs such as Manhattan, they might prefer to attend class closer to home.

8. Employment Status

Participants were asked to describe their employment status as: employed full-time; employed part-time; unemployed for less than 52 weeks; unemployed for 52 weeks or more; or unavailable for employment. Employment data were obtained for 93.2 percent of the total population.

Table 12
Employment Status

Employment Status	TOTAL		BE		ESOL	
	N	%	N	%	N	%
Full-time	25,053	47.9	6,695	34.8	18,358	55.6
Part-time	4,680	9.0	2,579	13.4	2,101	6.4
Unemployed less than 52 weeks	6,748	12.9	2,386	12.4	4,362	13.2
Unemployed 52 weeks or more	7,359	14.1	3,389	17.6	3,970	12.0
Not available for employment	8,437	16.1	4,216	21.9	4,221	12.8

Table 12 shows that ESOL students had higher employment rates than BE students. For example, while 48.2 percent of the BE students were employed (34.8 percent were employed full-time and 13.4 percent were employed part-time), 62.0 percent of the ESOL students were employed (55.6 percent full-time and 6.4 percent part-time). Nearly 18 percent of the BE students, but only 12.0 percent of the ESOL students reported long term unemployment (greater than or equal to 52 weeks) and over 20 percent of the BE students, but only 12.8 percent of the ESOL students reported that they were not available for employment.

a. Demographic characteristic differences by employment status

A number of cross-tabulations were performed to determine the relationship between demographic characteristics and participants' employment status. The relationships evident in these cross-tabulations may have implications for program management. For example, for participants who are employed full-time or part-time, the relationship between where they work and where they live will have implications for the locations and scheduling of classes. Where feasible, classes should be arranged to accommodate the schedules of participants working full-time during the day or part-time in the evenings. Note that only the most important of these cross-tabulations are presented in the next section; as indicated earlier, the complete set of these data is available for examination at the Literacy Assistance Center.

Gender. Table 13 contains BE and ESOL participants' gender cross-tabulated with employment status. For both BE and ESOL, male students were much more likely to be

employed full-time than female students: 45.3 percent of the BE males and 70.0 percent of the ESOL males were employed full-time, but only 28.4 percent of the BE females and 45.8 percent of the ESOL females were employed full-time. Roughly equal percentages of female and male students attained part-time employment. For both BE and ESOL, female students were more likely to be unemployed for less than 52 weeks than male students and female students were far more likely to be long-term unemployed (21.6 percent versus 10.8 percent for BE and 14.8 percent versus 8.0 percent for ESOL) or not available for employment (24.4 percent versus 17.7 percent for BE and 18.3 percent versus 4.6 percent for ESOL) than male students.

Table 13
Gender by Employment Status

Employment Status	BE		ESOL	
	Female	Male	Female	Male
Full-Time	3,446 28.4%	3,218 45.3%	8,999 45.8%	9,316 70.0%
Part-Time	1,524 12.6%	1,049 14.8%	1,330 6.8%	766 5.8%
Unemployed < 52 weeks	1,575 13.0%	809 11.4%	2,816 14.3%	1,544 11.6%
Unemployed ≥ 52 weeks	2,616 21.6%	768 10.8%	2,899 14.8%	1,064 8.0%
Not Available for Employment	2,952 24.4%	1,253 17.7%	3,597 18.3%	619 4.6%

Ethnicity. Tables 14a and 14b contain BE and ESOL participants' ethnicity cross-tabulated with employment status. Among BE participants, Hispanic students were least likely to be employed full-time (26.1 percent) and most likely to be unemployed (35.4 percent) or not available for employment (28.1 percent) than any of the other ethnic groups. White students were least likely to be long-term unemployed (13.8 percent).[8]

Among ESOL students, white students experienced a lower rate of full-time employment (33.3 percent) than American Indian (59.5 percent), Asian (55.7 percent), black (58.8 percent) or Hispanic (60.2 percent) students. Over fifty percent of the white students were unemployed (long-term or short-term), while approximately 30 percent of both the American Indian and Asian students were unemployed, and approximately 20 percent of both the black and Hispanic populations were unemployed. Hispanic and white students were more likely to be unavailable for employment (15.3 percent and 10.8 percent, respectively) than the other ethnic groups.

Table 14a - BE Students
Ethnicity by Employment Status

Employment Status	Ethnicity				
	American Indian	Asian	Black	Hispanic	White
Full-time	34 43.6%	417 39.5%	4,193 38.0%	1,423 26.1%	586 37.9%
Part-time	10 12.8%	131 12.4%	1,676 15.2%	568 10.4%	179 11.6%
Unemployed < 52 weeks	4 5.1%	105 9.9%	1,280 11.6%	764 14.0%	220 14.2%
Unemployed ≥ 52 weeks	15 19.2%	172 16.3%	1,800 16.3%	1,164 21.4%	213 13.8%
Not available for employment	15 19.2%	232 21.9%	2,075 18.8%	1,529 28.1%	350 22.6%
Total	78 99.9%	1,057 100.0%	11,024 99.9%	5,448 99.9%	1,548 100.1%

[8]Note that the data on American Indians is based on only 78 students in BE and 37 students in the ESOL program.

Table 14b - ESOL Students
Ethnicity by Employment Status

Employment Status	Ethnicity				
	American Indian	Asian	Black	Hispanic	White
Full-time	22 59.5%	2,692 55.7%	1,780 58.8%	12,235 60.2%	1,556 33.3%
Part-time	2 5.4%	340 7.0%	403 13.3%	1,156 5.7%	194 4.2%
Unemployed < 52 weeks	4 10.8%	656 13.6%	301 9.9%	1,678 8.3%	1,710 36.6%
Unemployed ≥ 52 weeks	8 21.6%	739 15.3%	360 11.9%	2,144 10.6%	708 15.2%
Unavailable for employment	1 2.7%	406 8.4%	183 6.0%	3,105 15.3%	505 10.8%
Total	37 100.0%	4,833 100.0%	3,027 99.9%	20,318 100.1%	4,673 100.1%

Class schedule. Table 15 presents students' program time (day or evening) cross-tabulated with their employment status.

Table 15
Time of Day Attending Program by Employment Status

Employment Status	BE		ESOL	
	Day	Evening	Day	Evening
Full-Time	1,598 15.4%	4,943 60.6%	3,738 29.7%	14,084 72.5%
Part-Time	1,723 16.6%	806 9.9%	872 6.9%	1,137 5.9%
Unemployed < 52 weeks	1,595 15.4%	668 8.2%	2,458 19.5%	1,831 9.4%
Unemployed ≥ 52 weeks	2,453 23.6%	708 8.7%	2,663 21.1%	1,124 5.8%
Not Available for Employment	3,007 29.0%	1,030 12.6%	2,861 22.7%	1,255 6.5%
Total	10,376 100.0%	8,155 100.0%	12,592 99.9	19,431 100.1

Not surprisingly, there were large differences between day and evening students' employment status within both the BE and ESOL populations. Both the evening BE and ESOL populations were much more likely to have been employed full-time (60.6 percent and 72.5 percent, respectively) than daytime students (15.4 percent and 29.7 percent, respectively). Correspondingly, daytime BE and ESOL students were more likely to be unemployed (39.0 percent and 40.6) than evening students (16.9 percent and 15.2 percent, respectively) or not available for employment (29.0 percent and 22.7 percent, respectively) than evening students (12.6 percent and 6.5 percent, respectively).

9. Public Assistance Status

At the time of registration into the program, participating students were asked to indicate if they were receiving public assistance benefits. Overall, 20.9 percent of the total student population reported receiving public assistance. Among BE students, 32.9 percent reported that they were receiving public assistance; of the ESOL students, 13.9 percent were receiving public assistance.

Table 16
Public Assistance Status

Public Assistance Status	TOTAL		BE		ESOL	
	N	%	N	%	N	%
Receive Public Assistance	11,723	20.9	6,816	32.9	4,907	13.9
Do Not Receive Public Assistance	44,359	79.1	13,915	67.1	30,444	86.1

a. Demographic characteristics by public assistance status

A number of cross-tabulations were performed to determine the relationship between participants' public assistance status and other demographic characteristics. For example, what is the relationship between employment status and public assistance status? Is this relationship the same for females and males? Is it the same for all ethnic groups? Once again, only a sample of these cross-tabulations are presented in the next section; the complete set of these data is available for examination at the Literacy Assistance Center.

Employment Status. Tables 17a and 17b present BE and ESOL participants' employment status cross-tabulated with their public assistance status. In general, the unemployed were much more likely to receive public assistance than the employed. As expected, of the BE and ESOL students working full-time, only 2.8 percent of the BE students and 1.4 percent of the ESOL students received public assistance. Nearly 18 percent of the BE students employed part-time and only 4.4 percent of the ESOL students employed part-time reported that they received public assistance. Of the short-term unemployed, over half of the BE students (57.1 percent), but only one-third of the ESOL students (33.7 percent) reported receiving public assistance. Of the long-term unemployed, 42.5 percent of the BE students and 23.7 percent of the ESOL students reported receiving public assistance. The highest percentages of students receiving public assistance were for those not available for employment: 67.0 percent of the BE students not available for employment and 47.1 percent of the ESOL students not available for employment reported receiving public assistance.

Table 17a - BE Students
Employment Status by Public Assistance Status

Public Assistance Status	Employment Status				
	Full-time	Part-time	Unemployed < 52 weeks	Unemployed ≥ 52 weeks	Not available for employment
Receive PA	186 2.8%	458 17.8%	1,934 57.1%	1,013 42.5%	2,824 67.0%
Do not receive PA	6,509 97.2%	2,121 82.2%	1,455 42.9%	1,373 57.5%	1,392 33.0%
Total	6,695 100.0%	2,579 100.0%	3,389 100.0%	2,386 100.0%	4,216 100.0%

Table 17b - ESOL Students
Employment Status by Public Assistance Status

Public Assistance Status	Employment Status				
	Full-time	Part-time	Unemployed < 52 weeks	Unemployed ≥ 52 weeks	Not available for employment
Receive PA	252 1.4%	92 4.4%	1,338 33.7%	1,032 23.7%	1,989 47.1%
Do not receive PA	18,106 98.6%	2,009 95.6%	2,632 66.3%	3,330 76.3%	2,232 52.9%
Total	18,358 100.0%	2,101 100.0%	3,970 100.0%	4,362 100.0%	4,221 100.0%

Gender. Table 18 contains BE and ESOL participants' gender cross-tabulated with public assistance status. Given the correlation between female students and unemployment, it is not surprising that, as table 18 shows, a higher percentage of female students reported receiving public assistance in both the BE population (40.0 percent) and the ESOL population (23.5 percent) than the male population (22.7 percent in BE and 5.2 percent in ESOL).

Table 18
Gender by Public Assistance Status

Public Assistance Status	BE		ESOL	
	Female	Male	Female	Male
Receive PA	5,090 40.0%	1,679 22.7%	3,971 23.5%	914 5.2%
Do not receive PA	7,620 60.0%	5,711 77.3%	12,954 76.5%	16,520 94.8%

Ethnicity. Tables 19a and 19b present BE and ESOL participants' ethnicity cross-tabulated with their public assistance status. Among BE students, approximately 30 percent of the American Indian, Asian and black students reported receiving public assistance. Nearly half of the Hispanic students (45.4 percent), but less than one-fourth of the white students reported receiving public assistance.

Table 19a - BE Students
Ethnicity by Public Assistance Status

Public Assistance Status	Ethnicity				
	American Indian	Asian	Black	Hispanic	White
Receive PA	24 29.6%	340 31.0%	3,446 29.9%	2,568 45.4%	358 22.3%
Do not receive PA	57 70.4%	756 69.0%	8,079 70.1%	3,083 54.6%	1,245 77.7%
Total	81 100.0%	1,096 100.0%	11,525 100.0%	5,651 100.0%	1,603 100.0%

Among ESOL participants, less than ten percent of the American Indian, Asian and black students reported receiving public assistance, but 16.2 percent of the Hispanic students and 18.7 percent of the white students reported receiving public assistance.

Table 19b - ESOL Students
Ethnicity by Public Assistance Status

Public Assistance Status	Ethnicity				
	American Indian	Asian	Black	Hispanic	White
Receive PA	3 6.4%	444 8.8%	87 2.8%	3,432 16.2%	899 18.7%
Do not receive PA	44 93.6%	4,607 91.2%	3,039 97.2%	17,737 83.8%	3,919 81.3%
Total	47 100.0%	5,051 100.0%	3,126 100.0%	21,169 100.0%	4,818 100.0%

As demonstrated in Tables 14a and 14b, Hispanic students have the highest unemployment rate among BE students (63.5 percent), and white students have the highest unemployment rate among ESOL students (62.6 percent). Thus, it is not surprising that these two groups have the highest rates of public assistance. However, this correlation between unemployment and public assistance is not the same for all ethnic groups. White BE students, for example, have the second highest unemployment rate among BE students (50.6 percent), but have the lowest rate of public assistance among BE students (22.3 percent). Similarly, the employment rate of Hispanic ESOL students (65.9 percent) is similar to that of Asian students (62.7 percent) and American Indian students (64.9 percent), but Hispanic ESOL students have a much higher rate of public assistance (16.2 percent) than Asian ESOL students (8.8 percent) and American Indian ESOL students (6.4 percent). It is possible that members of some ethnic groups are more likely to seek public assistance than members of other ethnic groups. Information on public assistance may also be more readily available in Spanish (which would account for the high rate of public assistance among Hispanics) than languages other than English and Spanish.

10. Basic Education participants educated in the United States

Since one important goal of the initiative is to reach native-born students educated in the United States in need of basic education, the research advisory committee requested that this group be isolated for study. A new variable called "students educated in the U.S." was constructed by first excluding from the BE population any immigrants and refugees, and then excluding any of the remaining BE students whose highest grade completed exceeded the number of years of education they had in the United States[9]. Of the 20,731 BE students in the data base, 7,761 (37.4 percent) were identified as having been educated in the United States.

For this cohort, data were compiled on: ethnicity; age; program borough; borough of residence; employment status; and public assistance status. In addition, cross-tabulations of program contact, achievement gains, and entry levels were prepared. The complete set of these data also are available for examination at the Literacy Assistance Center.

Of the 7,761 U.S.-educated BE participants, information on gender was obtained for 7,725 students: 4,790 or 61.8 percent were female and 2,935 or 37.9 percent were male. The percentage of male U.S.-educated BE students was similar to the percentage of male BE students overall (36.8 percent) and, the percentage of U.S.-educated female BE students was correspondingly similar to the percentage of female BE students overall (63.2 percent).

[9]If, for example, an individual completed 10th grade, but attended only 8 years of school in the US, it can be assumed that he/she attended at least 2 years of school elsewhere and would not be included in the category of U.S.-educated.

Ethnicity. Table 20 presents the ethnic status for U.S.-educated BE students. More than half of the U.S.-educated BE students were black (58.4 percent), while 33.4 percent were Hispanic. The percentage of Hispanic U.S.-educated BE students was slightly higher than that of the Hispanic BE population (33.4 percent versus 28.3 percent), while the percentage of Asian U.S.-educated BE students was lower than that of the Asian BE population (0.4 percent versus 5.5 percent).

Table 20 - U.S.-Educated BE Students
Ethnicity

Ethnicity	U.S.-Educated BE		All BE	
	N	%	N	%
American Indian	24	0.3	81	0.4
Asian	32	0.4	1,096	5.5
Black	4,492	58.4	11,525	57.8
Hispanic	2,567	33.4	5,651	28.3
White	578	7.5	1,603	8.0

Age. Table 21 presents U.S.-educated BE students' ages compared with the ages of the total BE population. As the mean ages in Table 21 indicate, the U.S.-educated BE student population was slightly younger than the total BE population (33.6 versus 34.1 years of age). Since the overall population is slightly older, it is not surprising that the U.S.-educated student population had higher percentages of students in the 18-21 and 22-29 year old age ranges.

Table 21 - U.S.-Educated BE Students
Age

Age	U.S.-Educated BE		All BE	
	N	%	N	%
17 or less	31	0.4	55	0.3
18 - 21	1,275	16.5	2,356	11.4
22 - 29	2,619	33.8	6,009	29.1
30 - 39	2,117	27.3	6,280	30.4
40 - 49	1,079	13.9	3,692	17.9
50 - 59	471	6.1	1,688	8.2
60 and above	154	2.0	544	2.7
Mean age	33.6		34.1	

Program Borough. Table 22 presents U.S.-educated BE students' program borough compared with the total BE student population. The largest percentage of U.S.-educated BE students attended programs in Manhattan (46.8 percent). U.S.-educated students were more likely to attend Manhattan programs than the BE student population as a whole (46.8 percent versus 38.3 percent), but less likely to attend programs in Brooklyn (17.8 percent versus 22.4 percent). It should be noted that U.S.-educated BE students were more likely to live in Manhattan and less likely to live in Brooklyn (see Table 23). The concentrations of U.S.-educated BE students in the other three boroughs were generally consistent with those of BE students as a whole.

Table 22 - U.S.-Educated BE Students
Program Borough

Program Borough	U.S.-Educated BE		All BE	
	N	%	N	%
Bronx	1,450	19.1	3,783	18.8
Brooklyn	3,554	17.8	4,514	22.4
Manhattan	1,367	46.8	7,721	38.3
Queens	1,159	15.3	3,802	18.8
Staten Island	65	0.9	354	1.8

Borough of Residence. U.S.-educated BE students' borough of residence is shown in Table 23. The largest percentage of such BE students resided in the Bronx (29.9 percent) followed by Brooklyn (29.3 percent) and Manhattan (24.1 percent). U.S.-educated BE students were more likely to live in the Bronx or Manhattan and less likely to live in Queens, Brooklyn, or Staten Island, as compared with the total BE student population.

Table 23 - U.S.-Educated BE Students
Borough of Residence

Borough of Residence	U.S.-Educated BE		All BE	
	N	%	N	%
Bronx	2,272	29.9	4,188	25.8
Brooklyn	2,227	29.3	5,676	34.9
Manhattan	1,834	24.1	2,856	17.6
Queens	1,179	15.5	3,197	19.7
Staten Island	91	1.2	343	2.1

Employment Status. The employment status of U.S.-educated BE students in comparison to BE students overall is reported in Table 24. In general, U.S.-educated BE students' employment rates were lower than the BE students' employment rates overall (37.2 versus 48.2). U.S.-educated BE students were also more likely to be not available for employment (28.3 percent) than the total BE population (21.9 percent).

Table 24 - U.S.-Educated BE Students
Employment Status

Employment Status	U.S.-Educated BE		All BE	
	N	%	N	%
Full-Time	1,509	20.4	6,695	34.8
Part-Time	1,242	16.8	2,579	13.4
Unemployed less than 52 weeks	985	13.3	2,386	12.4
Unemployed greater than or equal to 52 weeks	1,569	21.2	3,389	17.6
Not available for employment	2,097	28.3	4,216	21.9

Public Assistance Status. The public assistance status of U.S.-educated BE students and for all BE students appears in Table 25. In conjunction with the low rate of employment reported among U.S.-educated BE students, 49.2 percent reported receiving public assistance compared to 32.9 percent of the BE students in general.

Table 25 - U.S.-Educated BE Students
Public Assistance Status

Public Assistance Status	U.S.-Educated BE		All BE	
	N	%	N	%
Receive Public Assistance	3,816	49.2	6,816	32.9
Do Not Report Receiving Public Assistance	3,945	50.8	13,915	67.1

B. Within-Year (1989-90): Achievement Test Outcomes and Contact Hours

This section of the report reviews achievement test outcomes and contact hours for students in the 1989-1990 program year.

For BE students, total pre- and post-test data and mean gains in grade equivalents were obtained for 8,062 students (approximately 39 percent of the total BE enrollment). For ESOL students, total pre- and post-test data and mean gains were obtained for 15,968 students (approximately 45 percent of the total ESOL enrollment). Program separations and late entry dates account for much of this apparent data loss. Tables 26a and 26b summarize, separately for BE and for ESOL, average achievement gains (expressed in grade equivalents obtained from the Test of Adult Basic Education (TABE) for BE, and in John Test raw score units for ESOL); as a function of entry level.

Table 26a - BE Students
1989-1990 Achievement Test Outcomes

Entry Level	Mean Gain	
	N	Months
less than 3	513	10.0 months
3 - 4.9	1,447	10.0 months
5 - 6.9	3,317	10.1 months
7 - 8.9	2,173	9.1 months
9 - 12.9	612	1.1 months
Mean Achievement Gain	9.1 months	

Table 26b - ESOL Students
1989-1990 Achievement Test Outcomes

Entry Level	N	Mean Gain (raw score)
less than 21 (Level I)	8,445	18.7
21 - 40 (Level II)	3,670	14.9
41 - 60 (Level III)	2,628	10.5
61 and above (Level IV)	1,225	4.0
Mean Achievement Gain	15.3	

It can be seen in Tables 26a and 26b that the average BE student increased by 9.1 months on the grade equivalent scale; ESOL students demonstrated an average gain of 15.3 raw score units. To a certain extent, achievement gains for BE students were inversely proportional to entry level scores (e.g., BE students entering at or below 3.0 averaged a 10.0 month gain, while students entering between 9 and 12.9 averaged a 1.1 month gain). Higher entry level ESOL students also demonstrated a smaller total gain in raw score units than lower entry level ESOL students: Students entering the ESOL program at the lowest level showed a mean gain of 18.7 raw score units, while students entering with more than 60 John Test points gained an average of only 4.0 points. This curtailed performance at the highest level of ESOL is partly attributable to the influence of a test ceiling effect: a student whose entry score is close to the highest possible score can not improve her/his score as much as a student whose entry score is much lower.

Tables 27a and 27b summarize, separately for BE and for ESOL, the average number of contact hours as a function of entry level.

Table 27a - BE Students
Contact Hours

Entry Level	Contact Hours
less than 3	135.5
3 - 4.9	123.3
5 - 6.9	117.1
7 - 8.9	100.5
9 - 12.9	92.6
Average Number of Contact Hours	112.3

Table 27b - ESOL Students
Contact Hours

Entry Level	Contact Hours
less than 21 (Level I)	98.3
21 - 40 (Level II)	115.0
41 - 60 (Level III)	121.0
61 and above (Level IV)	134.9
Average Number of Contact Hours	108.1

Tables 27a and 27b show that the average number of contact hours was 112.3 for BE students and 108.1 for ESOL students. Contact hours appear to decline for BE students as the entry level rises (e.g., BE students entering at or below 3.0 average 135.5 contact hours, while students entering at or above 9.0 average only 92.6 hours). Conversely, for ESOL students the average number of contact hours appears to increase for higher entry levels. Students entering the ESOL program at the lowest level show a mean of 98.3 hours, while students entering with more than 60 John Test points show an average of 134.9 hours.

C. Findings of Over-Years Analyses

A number of comparative studies were performed which contrast the results of the 1985-1986 analyses, the 1986-1987 analyses, the 1987-1988 analyses, and the 1988-1989 analyses with those obtained from the 1989-1990 file. Comparative studies addressed at least some aspects of each of the within-year analyses. Comparisons involving data elements which appeared in the data base for the first time in later files (e.g., commuting patterns, day versus evening) do not include data for 1985-86.

Before describing some of the demographic and outcome data, it is significant to note that, over time, the programs have been serving more and more BE and ESOL students (approximately 40,500 in 1985-1986 and more than 56,000 in 1989-1990 -- an increase of more than 38%), and the within-year proportion of BE students has been steadily declining (from approximately 40% in 1985-1986 to 37% in 1989-1990 -- a decrease of 7.5%).

Tables 28a and 28b summarize, separately for BE and for ESOL, previous participants' and 1989-1990 participants' selected demographic characteristics (i.e., gender, ethnicity, age, employment status, and public assistance status, and, where available, boroughs of residence and the time of day they attended classes).

Table 28a - BE Students
Over-Years Demographic Data

Demographic Characteristics	1985-86		1986-87		1987-88		1988-89		1989-90	
	N	%	N	%	N	%	N	%	N	%
Gender:										
Female	9,317	57.6	9,550	57.9	10,585	60.9	11,058	63.5	12,710	63.2
Male	6,839	42.4	6,946	42.1	6,804	39.1	6,369	36.5	7,390	36.8
Ethnicity:										
American Indian	86	0.5	89	0.5	70	0.4	88	0.5	81	0.4
Asian	393	2.4	541	3.3	798	4.6	813	4.7	1,096	5.5
Black	9,534	59.4	9,646	59.2	10,202	59.1	10,032	57.9	11,525	57.8
Hispanic	4,942	30.8	4,745	29.1	4,702	27.2	4,927	28.5	5,651	28.3
White	1,092	6.8	1,285	7.9	1,492	8.7	1,456	8.4	1,603	8.0
Mean Age	--	30.9	--	31.5	--	32.6	--	33.2	--	34.1
Employment Status:										
Full-time	4,429	28.2	5,445	33.8	5,785	33.5	5,991	34.5	6,695	34.8
Part-time	1,842	11.7	2,348	14.6	2,655	15.4	2,592	14.9	2,579	13.4
Unemployed < 52 wks	2,037	13.0	1,900	11.8	1,781	10.3	1,866	10.7	2,386	12.4
Unemployed $\geq$ 52 wks	4,357	27.7	3,358	20.8	3,351	19.4	3,192	18.4	3,389	17.6
Unemployed & not avail	3,055	19.4	3,080	19.1	3,689	21.4	3,745	21.5	4,216	21.9
Receive Public Assistance	4,839	29.7	4,937	29.1	4,824	28.3	6,115	34.1	6,816	32.9
Attend Program in Borough of Residence:										
Bronx				66.7			2,328	64.1	2,740	65.5
Brooklyn	N/A	N/A	N/A	60.8	N/A	N/A	3,656	68.3	3,421	64.1
Manhattan				89.8			2,237	90.5	2,654	92.9
Queens				73.2			2,039	79.9	2,655	83.1
Staten Island				98.3			196	70.3	289	85.3
Time of Class:										
Day	N/A	N/A	8,021	50.0	9,035	53.0	9,107	52.2	11,194	56.2
Evening			8,036	50.0	8,028	47.0	8,356	47.8	8,730	43.8

It can be seen in Table 28a that:

- the percentage of women enrolled in BE programs has increased from 57.6 percent in 1985-86 to 63.2 percent in 1989-90, a difference of 5.6 percentage points;

- The ethnic composition of BE students has remained more or less the same, although there has been a steady increase in the Asian population (2.4 percent in 1985-86 versus 5.5 percent in 1989-1990), and a small, but steady decline in black and Hispanic populations.

- slightly older BE students are enrolled in the program each year;

- more BE students are employed full-time (28.2 percent in 1985-86 versus 34.8 percent in 1989-90) and fewer BE students are unemployed for a year or more (27.7 percent in 1985-86 versus 17.6 percent 1989-1990);

- despite increased employment among BE students, the percentage of public assistance recipients has increased by more than three percentage points (from 29.7 percent in 1985-86 to 32.9 percent in 1989-90);

- slightly higher percentages of students are attending programs in their borough of residence in 1989-90 than in previous years;

- more BE students are attending class during the day in 1989-90 (56.2 percent) than were in 1986-87 (50.0 percent).

Table 28b - ESOL Students
Over-Years Demographic Data

Demographic Characteristics	1985-86		1986-87		1987-88		1988-89		1989-90	
	N	%	N	%	N	%	N	%	N	%
Gender:										
Female	14,813	61.0	16,108	62.3	16,588	63.4	18,060	61.8	20,491	59.6
Male	9,462	39.0	9,743	37.7	9,560	36.6	11,184	38.2	13,868	40.4
Ethnicity:										
American Indian	54	0.2	45	0.2	42	0.2	34	0.1	47	0.1
Asian	4,758	19.6	4,861	18.9	4,616	17.7	5,252	18.0	5,051	14.8
Black	2,245	9.2	2,559	10.0	2,770	10.6	2,826	9.7	3,126	9.1
Hispanic	14,325	59.0	15,579	60.7	15,898	61.0	17,518	60.3	21,169	61.9
White	2,894	11.9	2,637	10.3	2,736	10.5	3,470	11.9	4,818	14.1
Mean Age	--	35.0	--	36.0	--	36.1	--	36.2	--	37.1
Employment Status:										
Full-time	10,733	45.4	13,336	52.2	13,846	52.9	16,132	55.4	18,358	55.6
Part-time	1,716	7.3	1,659	6.5	1,939	7.4	2,019	6.9	2,101	6.4
Unemployed < 52 weeks	3,181	13.5	2,914	11.4	2,731	10.4	3,036	10.4	4,362	13.2
Unemployed ≥ 52 weeks	3,520	14.9	3,235	12.7	3,446	13.2	3,685	12.7	3,970	12.0
Unemployed & not avail	4,487	19.0	4,396	17.2	4,199	16.1	4,250	14.6	4,221	12.8
Receive Public Assistance	3,209	13.1	4,007	14.7	4,824	14.6	4,802	15.9	4,907	13.9
Attend Program in Borough of Residence:										
Bronx				67.1			2,839	73.6	3,424	74.9
Brooklyn	N/A	N/A	N/A	72.4	N/A	N/A	5,726	65.8	5,169	66.3
Manhattan				94.1			4,997	94.1	5,778	95.4
Queens				73.6			3,422	72.0	4,671	72.1
Staten Island				98.0			156	47.1	290	80.6
Time of Class:										
Day	N/A	N/A	8,710	34.0	8,682	34.2	10,774	37.6	13,506	39.4
Evening			16,888	66.0	16,674	65.8	17,909	62.4	20,783	60.6

Table 28b shows that:

- After a peak in 1987-88 at 63.4 percent, the percentage of female ESOL students has fallen to 59.6 percent, its lowest point in five years.

- While the ethnic composition of the ESOL population remained relatively steady from 1985-86 to 1988-89, there was a decrease in the percentage of Asian ESOL students from 1988-89 (18.0 percent) to 1989-90 (14.8 percent) and an increase in the percentage of white students (from 11.9 percent to 14.1 percent) over those same years;

- ESOL students' mean age increased slightly from 35.0 years of age in 1985-86 to 37.1 years of age in 1989-90;

- the percentage of ESOL participants employed full-time has increased by more than ten percentage points, from 45.4 percent in 1985-86 to 55.6 percent in 1989-90;

- the percentage of students attending programs in their borough of residence has remained steady for all boroughs except Staten Island; and,

- the percentage of students enrolled in daytime classes has increased from 34.0 percent in 1986-87 to 39.4 percent in 1989-90, while, conversely, the percentage of students enrolled in evening classes has decreased from 66.0 percent in 1986-87 to 60.6 percent in 1989-90.

Tables 29a and 29b present the following achievement data over years for BE and ESOL students separately: mean achievement gains by entry level (expressed in TABE grade equivalent months for BE, and in John Test raw score units for ESOL); overall mean achievement gain; and average number of contact hours.

Table 29a
BE Achievement Test Mean Gains (in Months) Over Years

Entry Level	1985-86	1986-87	1987-88	1988-89	1989-90
less than 3	18.2	10.8	12.6	10.6	10.0
3 - 4.9	11.7	11.6	11.3	11.3	10.0
5 - 6.9	7.4	10.5	10.1	10.0	10.1
7 - 8.9	3.8	9.0	8.1	8.2	9.1
Average Achievement Gain	8.5	9.9	9.8	9.3	9.1
Average Number of Contact Hours	74.0	86.4	110.1	117.1	115.0

Table 29a shows, for BE students, that:

- since 1986-87, there has been a steady decline in overall within-year achievement gain from 9.9 to 9.1;
- a substantial increase in the average number of contact hours, from 74.0 in 1985-86 to 115.0 hours in 1989-90 for BE students; and,
- 1989-90 lower level students did not improve as much in comparison to higher level students as had students in previous years.
- 1989-90 students entering at the 7-8.9 level achieved greater gain than students entering at this level in previous years.

Table 29b
ESOL Achievement Test Mean Gains Over Years

Entry Level	1985-86	1986-87	1987-88	1988-89	1989-90
less than 21	17.3	20.5	20.0	18.4	18.7
21 - 40	13.9	16.8	15.7	15.3	14.9
41 - 60	8.6	11.1	11.0	10.8	10.5
61 and above	2.6	4.0	3.6	5.3	4.0
Average Achievement Gain	13.2	16.8	16.0	15.5	15.3
Average Number of Contact Hours	81.9	85.6	103.0	112.3	108.5

Table 29b shows, for ESOL students, that:

- since 1986-87, there has been a steady decline in the overall within-year achievement gains from 16.8 to 15.3;
- there was a substantial increase in the average number of contact hours from 81.9 in 1985-86 to 108.5 hours in 1989-90; and
- the achievement test scores of students who entered at lower levels continued to improve more than the achievement test scores of students who entered at higher levels.

D. Findings of Longitudinal Analyses

A series of analyses were executed to determine the demographic characteristics of students who participate in adult literacy programs for more than one year, and the long-term effects of program participation. For example, do students retain or surpass their initial growth during a second or third year of participation? What segments of the served population continue beyond a single year? What is the relative impact of multi-year participation?

The longitudinal analyses made use of two concatenated research files containing two years of data: one which contains data for all students appearing in the 1988-89 and 1989-90 computer files and the other which contains data for all students appearing in the 1987-88, 1988-89 and 1989-90 files. Students were matched for this purpose using the unique identification number which has been assigned to them. On investigation it was discovered that many students received very few hours of instruction during at least one of their program years. Therefore, the research advisory group suggested that some minimal contact be defined before students appearing in two or more files could be considered members of a longitudinal cohort. The following definition was selected: students with twenty or more hours of contact in each consecutive year would be eligible for a cohort.

1. Two-Year Longitudinal versus Baseline Year (1988-1989)

The concatenated file for the two-year cohort contains 10,464 students. Of these students, 4,213 or 40.3 percent were enrolled in BE, and 6,251 or 59.7 percent were enrolled in ESOL. The computer file for the 1988-1989 baseline (that is, the total 1988-89 BE student population) group contains 48,135 students. Of these students, 17,934 or 37.3 percent were enrolled in BE, and 30,201 or 62.7 percent were enrolled in ESOL. Approximately one-fifth (21.7 percent) of the 1988-89 total baseline group, 23.5 percent of the 1988-89 baseline BE population, and 20.7 percent of the 1988-89 baseline ESOL population remained enrolled for two years.

Table 30 shows, for those students who were in either BE or ESOL in 1988-89, student program status for 1989-90. In 1989-90, the overwhelming majority of two-year students (93.4 percent of BE students and 92.7 percent of ESOL students) remained in the type of instructional program which they entered in 1988-89.

Table 30
1990 Program Status of Two-Year Students

1990 Program Status	1988-89 BE Students		1988-89 ESOL Students	
	N	%	N	%
BE	3,933	93.4	248	4.0
ESOL	51	1.2	5,793	92.7
HSE	200	4.7	45	0.7
Other	29	0.7	165	2.6
Total	4,213		6,251	

Gender. Table 31 summarizes gender data for the two-year cohort and for its baseline group. There was a higher proportion of women overall in the two-year cohort as compared with the baseline group. For example, of the BE students, 67.9 percent in the two-year cohort were women, compared with 63.5 percent in the baseline group. Among ESOL students, women made up 68.9 percent of the two-year cohort compared with 61.8 percent of the baseline group. Conversely, the percentage of males who study for two years is smaller than the baseline group (31.5 percent versus 37.6 percent).

Table 31
Student Gender

Gender	TOTAL		BE		ESOL	
	Two-Year	Baseline 1988-89	Two-Year	Baseline 1988-89	Two-Year	Baseline 1988-89
Female	7,101 68.5%	29,118 62.4%	2,830 67.9%	11,058 63.5%	4,271 68.9%	18,060 61.8%
Male	3,265 31.5%	17,553 37.6%	1,337 32.1%	6,369 36.5%	1,928 31.0%	11,184 38.2%

Ethnicity. Table 32 summarizes the ethnic composition of both the two-year cohort and the 1988-89 baseline group. The ethnic composition of the two groups was similar, but there were a few exceptions: there was a higher percentage of Hispanic ESOL students in the two-year cohort (65.7 percent) than in the baseline cohort (60.3 percent); there was a slightly higher percentage of BE students in the two-year BE cohort (59.5 percent) than in the baseline cohort (57.9 percent) and a slightly lower percentage of black students in the two-year ESOL cohort (8.5 percent) than in the baseline cohort (9.7 percent); and there was a lower percentage of white students for both BE and ESOL in the two-year cohort (7.1 percent for BE and 8.8 percent for ESOL) than in the baseline cohort (8.4 percent for BE and 11.9 percent for ESOL).

Table 32
Student Ethnicity

Ethnicity	TOTAL		BE		ESOL	
	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89
American Indian	26 0.3%	122 0.3%	18 0.4%	88 0.5%	8 0.1%	34 0.1%
Asian	1,231 11.9%	6,065 13.1%	185 4.4%	813 4.7%	1,046 16.9%	5,252 18.0%
Black	3,005 29.0%	12,858 27.7%	2,477 59.5%	10,032 57.9%	528 8.5%	2,826 9.7%
Hispanic	5,252 50.7%	22,445 48.3%	1,187 28.5%	4,927 28.5%	4,065 65.7%	17,518 60.3%
White	839 8.1%	4,926 10.6%	295 7.1%	1,456 8.4%	544 8.8%	3,470 11.9%

Employment Status. Differences in employment status between the two groups are summarized in Table 33. Among BE participants, a higher percentage of two-year students were not available for employment (24.7 percent) than among the baseline group (21.5 percent). Among ESOL participants, a lower percentage of two-year students were employed full-time than in the baseline group (46.7 percent versus 55.4 percent) and a higher percentage of two-year students were long-term unemployed or not available for employment than in the baseline group (16.0 percent versus 12.7 percent and 20.5 percent versus 14.6 percent, respectively).

Table 33
Employment Status

Employment Status	TOTAL		BE		ESOL	
	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89
Full-time	4,218 41.4%	22,123 47.6%	1,383 33.6%	5,991 34.5%	2,835 46.7%	16,132 55.4%
Part-time	850 8.3%	4,611 9.9%	481 11.7%	2,592 14.9%	369 6.1%	2,019 6.9%
Unemployed < 52 weeks	1,063 10.4%	4,902 10.5%	417 10.1%	1,866 10.7%	646 10.6%	3,036 10.4%
Unemployed ≥ 52 weeks	1,791 17.6%	6,877 14.8%	817 19.9%	3,192 18.4%	974 16.0%	3,685 12.7%
Not available for employment	2,263 22.2%	7,995 17.2%	1,016 24.7%	3,745 21.5%	1,247 20.5%	4,250 14.6%

Public Assistance Status. Table 34 shows that the percentage of students in the two-year cohort receiving public assistance (32.6 percent) was much higher than the percentage of students in the baseline cohort receiving public assistance (23.2 percent). Among ESOL participants, differences between the two groups of students were most evident -- 27.6 percent of the two-year students reported receiving public assistance, compared with only 16.3 percent of the baseline students.

Table 34
Public Assistance Status

Public Assistance Status	TOTAL		BE		ESOL	
	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89
Receive Public Assistance	3,416 32.6%	10,834 23.2%	1,691 40.1%	6,065 34.8%	1,725 27.6%	4,769 16.3%
Do Not Report Receiving Public Assistance	7,048 67.4%	35,837 76.8%	2,522 59.9%	11,362 65.2%	4,526 72.4%	24,475 83.7%

Students' Borough of Residence. Table 35 contains borough of residence data for the total student population, BE students, and ESOL students for the two-year cohort and for the baseline group. The residential composition of the two-year cohort is generally consistent with that of the baseline cohort. The largest difference between the two-year and baseline populations is that of ESOL students from Brooklyn who comprise only 31.3 percent of the two-year cohort, but 35.1 percent of the baseline cohort -- a difference of 3.8 percentage points.

Table 35
Borough of Residence

Borough of Residence	TOTAL		BE		ESOL	
	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89
Bronx	1,925 21.2%	7,462 20.2%	907 23.7%	3,631 25.4%	1,018 19.4%	3,831 16.9%
Brooklyn	3,161 34.8%	13,340 36.1%	1,516 39.6%	5,361 37.5%	1,645 31.3%	7,979 35.1%
Manhattan	1,895 20.9%	7,819 21.1%	664 17.3%	2,481 17.3%	1,231 23.5%	5,338 23.5%
Queens	1,916 21.1%	7,760 21.0%	629 16.4%	2,552 17.8%	1,287 24.5%	5,208 23.0%
Staten Island	181 2.0%	610 1.6%	114 3.0%	279 2.0%	67 1.3%	331 1.5%

Students' Program Borough. Data for students' program borough are presented in Table 36. More students in the two-year cohort attend programs in the Bronx (17.0 percent) than in the baseline cohort (14.2 percent) and fewer students in the two-year cohort attend programs in Manhattan (39.5 percent) than in the baseline cohort (43.5 percent). While the percentage of two-year students attending programs in Brooklyn is consistent with the percentage of baseline cohort students attending programs in that borough, there is a higher percentage of BE two-year cohort students attending programs in Brooklyn than baseline cohort students (29.7 percent versus 24.8 percent) and a lower percentage of ESOL two-year cohort students attending Brooklyn programs than baseline cohort students (19.4 percent versus 22.5 percent).

Table 36
Program Borough

Program Borough	TOTAL		BE		ESOL	
	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89	Two Year	Baseline 1988-89
Bronx	1,736 17.0%	6,786 14.2%	786 19.1%	3,130 17.5%	950 15.6%	3,656 12.2%
Brooklyn	2,396 23.5%	11,183 23.3%	1,221 29.7%	4,439 24.8%	1,175 19.4%	6,744 22.5%
Manhattan	4,028 39.5%	20,851 43.5%	1,347 32.7%	7,008 39.1%	2,681 44.2%	13,843 46.1%
Queens	1,869 18.3%	8,684 18.1%	657 16.0%	3,106 17.3%	1,212 20.0%	5,578 18.6%
Staten Island	159 1.6%	431 0.9%	105 2.6%	234 1.3%	54 0.9%	197 0.7%

2. Three-Year Longitudinal versus Baseline Year (1987-1988)

There were 3,694 students enrolled for three consecutive years -- 1987-88, 1988-89, and 1989-89. Of these students, 1,644 (44.5 percent) were enrolled in BE, and 2,050 (55.5 percent) were enrolled in ESOL. In this section, the students in the three year cohort are compared with all students in the 1987-88 program year. In the 1987-88 baseline group, 44,811 students were enrolled in BE and ESOL programs. Of these students, 17,815 (39.8 percent) were enrolled in BE, and 26,996 (60.2 percent) were enrolled in ESOL. Of the 1987-88 baseline group, 9.2 percent of the BE students and 7.6 percent of the ESOL students were also enrolled in 1989-90.

Table 37 shows that the overwhelming majority of the three-year cohort (93.4 percent of BE students and 92.8 percent of ESOL students) remained in the type of instructional program which they entered in 1987-88.

Table 37
1990 Program Status of Third-Year Students

1990 Program Status	1987-88 BE Students		1987-88 ESOL Students	
	N	%	N	%
BE	1,535	93.4	102	5.0
ESOL	30	1.8	1,903	92.8
HSE	66	4.0	12	0.6
Other	13	0.8	33	1.6
Total	1,644	100.0	2,050	100.0

Gender. Table 38 summarizes the gender data for the total student population and for BE and ESOL separately. Overall, there was a higher percentage of women in the three-year cohort (69.7 percent) than in the baseline group (62.4 percent) for the total population. The pattern is similar for both the BE and the ESOL populations.

Table 38
Student Gender

Gender	TOTAL		BE		ESOL	
	Three-Year	Baseline 1987-88	Three-Year	Baseline 1987-88	Three-Year	Baseline 1987-88
Female	2,575 69.7%	27,173 62.4%	1,104 67.2%	10,585 60.9%	1,471 71.8%	16,588 63.4%
Male	1,082 29.3%	16,364 37.6%	528 32.1%	6,804 39.1%	554 27.0%	9,560 36.6%

Ethnicity. The data shown in Table 39 indicate that the ethnic composition of the three-year cohort was generally similar to that of the baseline group for the American Indian and Asian populations. However, black BE students comprised a higher percentage of the three-year cohort (62.6 percent) than of the baseline cohort (59.1 percent), while black ESOL comprised a lower percentage of the three-year cohort (7.3 percent) than of the baseline cohort (10.6 percent). Hispanic BE participants comprised a lower percentage of the three-year cohort (25.9 percent) than of the baseline cohort (27.3 percent), while Hispanic ESOL participants comprised a higher percentage of the three-year cohort (69.9 percent) than of the baseline cohort (61.0 percent). White students comprised a lower percentage of the three-year cohort for BE (6.6 percent versus 8.6 percent) and for ESOL (5.7 percent versus 10.5 percent).

Table 39
Student Ethnicity

Ethnicity	TOTAL		BE		ESOL	
	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88
American Indian	10 0.3%	112 0.3%	9 0.6%	70 0.4%	1 0.0%	42 0.2%
Asian	417 11.4%	5,414 12.5%	70 4.3%	798 4.6%	347 17.1%	4,616 17.7%
Black	1,168 32.0%	12,972 29.9%	1,021 62.6%	10,202 59.1%	147 7.3%	2,770 10.6%
Hispanic	1,837 50.3%	20,600 47.5%	422 25.9%	4,702 27.3%	1,415 69.9%	15,898 61.0%
White	233 6.1%	4,228 9.8%	108 6.6%	1,492 8.6%	115 5.7%	2,736 10.5%

Age. Table 40 shows age data for students in the three-year cohort and the 1987-88 baseline group. In general, the students in the three-year cohort were older than those in the 1987-88 baseline group. In the three-year cohort, there were lower percentages of students in the 18-21 and 22-29 age groups than in the baseline cohort. For example, for the total population, only 14.7 percent of the three-year cohort, but 26.6 percent of the baseline cohort were 22-29. Among older students (40-49 and 50-59), there were higher percentages of students in the three-year cohort than in the baseline cohort for the total, BE and ESOL populations. For example, for the total population 31.0 percent of the three-year cohort was 40-49 years old, but only 19.6 percent of the baseline cohort was 40-49 years old. Among students 17 years or less, students 30-39 years of age, and students over 60 years of age there were approximately equal percentages of students in the three-year cohort as in the baseline cohort.

Table 40
Student Age

Age	TOTAL		BE		ESOL	
	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88
17 or less	5 0.1%	40 0.1%	3 0.2%	25 0.2%	2 0.1%	15 0.1%
18- 21	107 2.9%	3,708 8.3%	52 3.2%	2,351 13.2%	55 2.7%	1,357 5.0%
22 - 29	541 14.7%	11,907 26.6%	287 17.5%	5,103 28.7%	254 12.5%	6,804 25.2%
30 - 39	1,154 31.4%	14,262 31.9%	496 30.3%	5,041 28.3%	658 32.3%	9,221 34.2%
40 - 49	1,139 31.0%	8,786 19.6%	465 28.4%	3,134 17.6%	674 33.1%	5,652 21.0%
50 - 59	534 14.5%	4,288 9.6%	250 15.3%	1,531 8.6%	284 13.9%	2,757 10.2%
60 +	198 5.4%	1,777 4.0%	86 5.2%	608 3.4%	112 5.5%	1,169 4.3%
Mean Age	40.3	35.8	39.8	34.5[10]	40.6	36.9

[10]BE and ESOL mean ages are approximations based on weighted means.

Public Assistance Status. The data in Table 41 show that the percentage of students in the three-year cohort who reported receiving public assistance (32.9 percent) was higher than the percentage of students in the baseline cohort who reported receiving public assistance (20.1 percent). Among ESOL participants, differences between the two groups were most evident -- 32.0 percent of the three-year cohort, but only 14.6 percent of the baseline cohort reported receiving public assistance.

Table 41
Participant Public Assistance Status

Public Assistance Status	TOTAL		BE		ESOL	
	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88
Receive Public Assistance	1,216 32.9%	8,522 20.1%	559 34.0%	4,824 28.3%	657 32.0%	3,698 14.6%
Do Not Report Receiving Public Assistance	2,478 67.1%	33,899 79.9%	1,085 66.0%	12,239 71.7%	1,393 68.0%	21,660 85.4%

Employment Status. The employment data shown in Table 42 indicate that the percentage of employed students (either full-time or part-time) was lower in the three-year cohort than in the baseline group for both BE and ESOL students. This is especially true among ESOL students where full-time employed students comprise only 41.5 percent of the ESOL three-year cohort, but 52.9 percent of the baseline cohort. Correspondingly, the percentage of students who were long-term unemployed or students not available for employment was higher in the three-year cohort than in the baseline cohort. Again, the difference is most evident among ESOL students not available for employment -- 27.3 percent of the ESOL three-year cohort, but only 16.1 percent of the baseline cohort.

Table 42
Participant Employment Status

Employment Status	TOTAL		BE		ESOL	
	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88	Three Year	Baseline 1987-88
Full-time	1,345 37.5%	19,631 45.2%	523 32.5%	5,785 33.5%	822 41.5%	13,846 52.9%
Part-time	269 7.5%	4,594 10.6%	149 9.3%	2,655 15.4%	120 6.1%	1,939 7.4%
Unemployed < 52 weeks	367 10.2%	4,512 10.4%	180 11.2%	1,781 10.3%	187 9.4%	2,731 10.4%
Unemployed ≥ 52 weeks	673 18.8%	6,797 15.6%	364 22.6%	3,351 19.4%	309 15.6%	3,446 13.2%
Not available for employment	935 26.1%	7,888 18.2%	393 24.4%	3,689 21.4%	542 27.3%	4,199 16.1%

4. Longitudinal Analyses: Achievement Test Outcomes

This section reviews the achievement test outcomes for BE and ESOL students in both of the longitudinal cohorts. Tables 43-46 summarize, for each BE and ESOL cohort, average achievement gains as a function of entry level (expressed in TABE grade equivalent scores for BE and in John Test raw scores for ESOL), average achievement gain, and the average number of contact hours.

BE Longitudinal Test Outcomes. Tables 43 and 44 show generally similar patterns of achievement gains for both BE cohorts.

Table 43
Longitudinal Analysis of Mean Achievement (in Months) by Entry Level
BE Two-Year Cohort (N = 2,055)

Entry Level	N	1988 Pretest	1988-89 Gain	1989 Post	1989-90 Gain	1990 Post	Total Gain
less than 3	325	20.8	10.7	31.5	3.0	34.5	13.7
3 - 4.9	588	37.9	10.6	48.5	3.9	52.4	14.5
5 - 6.9	767	57.4	8.7	66.1	3.5	69.6	12.2
7 - 8.9	292	76.1	5.1	81.2	3.9	85.1	9.0
Mean Achievement Gain		50.4	8.5	58.9	3.5	62.4	11.9
Mean Number of Contact Hours Per Year							181.6

Table 44
Longitudinal Analysis of Mean Achievement (in Months) by Entry Level
BE Three-Year Cohort (N = 797 students)

Entry Level	N	1987 Pre	87-88 Gain	1988 Post	88-89 Gain	1989 Post	89-90 Gain	1990 Post	Total Gain
< 3	249	15.6	12.8	28.4	5.8	34.2	1.5	35.7	20.1
3 - 4.9	237	37.3	11.2	48.5	2.0	50.5	3.8	54.3	17.0
5 - 6.9	243	56.6	8.2	64.8	2.4	67.2	3.3	70.5	13.9
7 - 8.9	59	76.4	2.8	79.2	1.9	81.1	5.5	86.6	10.2
Mean Achievement Cain		40.0	9.9	49.9	3.3	53.2	3.0	56.2	16.3
Mean Number of Contact Hours Per Year									212.4

By comparing the data in Tables 43 and 44, it can be seen that:

- for the 1987-88 and 1988-89 program years, entry level was inversely proportional to mean achievement gain. During the 1989-90 program year, students in the two-year cohort demonstrated similar mean achievement gains regardless of entry level, while the entry level was directly proportional to mean achievement gain for students in the three-year cohort;

- BE students in both cohorts achieved their greatest gains during their first program year -- 9.9 for the three-year cohort and 8.5 for the two-year cohort; and,

- Students in the three-year cohort averaged more contact hours per year (212.4 hours) than students in the two-year cohort (181.6 years).

ESOL Longitudinal Test Outcomes. The data in Tables 45-46 show longitudinal achievement outcomes for ESOL students.

Table 45
Longitudinal Analysis of Mean Achievement (in Raw Scores) by Entry Level
ESOL Two-Year Cohort (N = 3,676)

Entry Level	N	1988 Pre	1988-89 Gain	1989 Post	1989-90 Gain	1990 Post	Total Gain
less than 20	2,018	5.9	22.5	28.4	7.2	35.6	29.7
21-40	838	30.5	16.9	47.4	4.6	52.0	21.5
41-60	580	49.8	11.0	60.8	1.5	62.3	12.5
61+	240	68.7	4.1	72.8	-1.1	71.7	3.0
Mean Achievement Gain		22.5	18.2	40.7	5.2	45.9	23.4
Mean Number of Contact Hours Per Year						175.1	

Table 46
Longitudinal Analysis of Mean Achievement (in Raw Scores) by Entry Level
ESOL Three-Year Cohort (N = 1,184 students)

Entry Level	N	1987 Pre	87-88 Gain	1988 Post	88-89 Gain	1989 Post	89-90 Gain	1990 Post	Total Gain
< 20	596	6.4	21.8	28.2	7.2	35.4	7.1	42.5	36.1
21-40	290	30.6	16.2	46.8	5.8	52.6	4.7	57.3	26.7
41-60	213	49.6	9.5	59.1	2.9	62.0	1.8	63.8	14.2
61+	85	68.9	3.5	72.4	-3.6	68.8	0.4	69.2	0.3
Mean Achievement Gain		24.6	16.9	41.5	5.3	46.8	5.1	51.9	27.3
Mean Number of Contact Hours Per Year								208.5	

It can be seen in Tables 45 and 46 that:

- for both cohorts, students entering the ESOL program at the lowest level (0-20) made the greatest gains. Conversely, students entering the program at the highest level (over 60) made the smallest gains. The curtailed performance at the highest level is largely attributable to the influence of a test ceiling effect;

- students in both cohorts achieved their greatest gains during the first program year -- 18.2 for the two-year cohort and 16.9 for the three-year cohort;

- students in the three-year cohort averaged a greater number of contact hours per year (208.5 hours) than students in the two-year cohort (175.1 years).

IV. Conclusions

Table 47 (on the next page) contains a summary of the demographic data for the 1989-90 students. These data indicate that:

- the population was predominately female (61.0 percent);

- almost half (49.5 percent) of the total population was Hispanic. More than half of the BE population was black (57.8 percent), and more than a quarter were Hispanic (28.3 percent). Almost two-thirds (61.9 percent) of the ESOL population were Hispanic;

- the mean age for students was 36.0 years old;

- nearly half of the students (47.9 percent) were employed full-time;

- while approximately one-fifth (20.9 percent) of the total student population received public assistance, nearly one-third (32.9 percent) of the BE students, but approximately one-seventh (13.9 percent) of the ESOL students received public assistance;

- more than sixty percent of the residents of each borough attended programs in the same borough, with 94.6 percent of Manhattan residents attending programs in that borough; and

- more students attended class in the evenings (54.4 percent) than during the day (45.6 percent).

Table 47
Demographic Data

Demographic Characteristics	TOTAL		BE		ESOL	
	N	%	N	%	N	%
Gender:						
Female	33,201	61.0	12,710	63.2	20,491	59.6
Male	21,258	39.0	7,390	36.8	13,868	40.4
Ethnicity:						
American Indian	128	0.2	81	0.4	47	0.1
Asian	6,147	11.3	1,096	5.5	5,051	14.8
Black	14,651	27.0	11,525	57.8	3,126	9.1
Hispanic	26,820	49.5	5,651	28.3	21,169	61.9
White	6,421	11.9	1,603	8.0	4,818	14.1
Mean Age	--	36.0	--	34.1	--	37.1
Employment Status:						
Full-time	25,053	47.9	6,695	34.8	18,358	55.6
Part-time	4,680	9.0	2,579	13.4	2,101	6.4
Unemployed < 52 weeks	6,748	12.9	2,386	12.4	4,362	13.2
Unemployed ≥ 52 weeks	7,359	14.1	3,389	17.6	3,970	12.0
Unemployed & not available	8,437	16.1	4,216	21.9	4,221	12.8
Receive Public Assistance	11,723	20.9	6,816	32.9	4,907	13.9
Attend Program in Borough of Residence:						
Bronx	6,164	70.4	2,740	65.5	3,424	74.9
Brooklyn	8,590	65.4	3,421	64.1	5,169	66.3
Manhattan	8,432	94.6	2,654	92.9	5,778	95.4
Queens	7,326	75.7	2,655	83.1	4,671	72.1
Staten Island	579	82.8	289	85.3	290	80.6
Class Time:						
Day	24,700	45.6	11,194	56.2	13,506	39.4
Evening	29,513	54.4	8,730	43.8	20,783	60.6

In addition to demographic factors, this report examined measures of achievement gain. As shown previously in Tables 26a and 27a, the average BE student gained 9.1 months on the TABE, after 112.3 hours of contact. Similarly, Tables 26b and 27b show average John Test raw score gains among ESOL participants of 15.3 points, after 108.1 hours of contact.

Clearly, data such as those contained in this report have strong and immediate implications for citywide program management, planning, and policy development. For example: information on student commutation patterns has implications for student recruitment and site placement; employment status data have implications for targeting instruction and for class scheduling; the somewhat younger, relatively under-employed, and more Public Assistance

dependent, U.S.-educated BE students may require alternative instructional methodologies and/or support services. Similarly, as over years comparisons reveal trends in the demographic characteristics of the student body, then programs must prepare themselves to address their clients' changing needs. For example, current trend data show a population older and more likely to be employed, and with less basic skills than the populations of previous years. What special needs are revealed by the characteristics of the students who remain in programs over years? The longitudinal analysis has shown that relatively more of them are women and immigrants (especially Asian within ESOL), they enter programs at low achievement levels, and, by definition, they remain in programs for substantial periods of time. This group presents a unique challenge to program planners and pedagogical personnel.

While the data in this report provide valuable insights, they also suggest additional research questions. A few examples follow. Are student commutation patterns related to employment, to program availability, or to access to transportation? Many students leave programs when they get jobs. Was getting a job their goal? If not, how can the programs continue to address their needs? Are programs serving the students who are most in need? What are the antecedents to program participation? What are the consequences of early separation? How stable are the trends that are shown in the over years analyses? What is the significance of the longitudinal cohort's achievement growth patterns?

The above questions are merely suggestive of the kinds of inquiries which may derive from an inspection of the information contained in New York City's adult literacy data base. Some of these questions are being addressed in a longitudinal study of adult learners now being conducted by the Literacy Assistance Center. Inquiry that is guided by knowledgeable practitioners, policy makers and researchers has generated, and will continue to generate, valuable insights in service to the adult literacy community.