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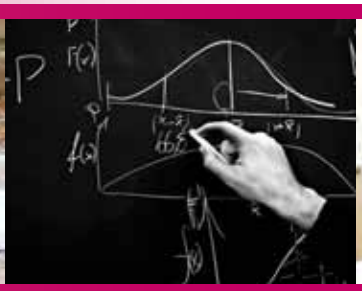

Improving Educational Outcomes of English Language Learners in Schools and Programs in Boston Public Schools

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This report, ***Improving Educational Outcomes of English Language Learners in Schools and Programs in Boston Public Schools,*** and its companion report, ***Learning from Consistently High Performing and Improving Schools for English Language Learners in Boston Public Schools,*** are part of a larger project, ***Identifying Success in Schools and Programs for English Language Learners in Boston Public Schools,*** commissioned by the Boston Public Schools as part of this process of change set in motion by the intervention of the state and the federal governments on behalf of Boston's English language learners. The project was conducted at the request of the Office for English Language Learners and is a collaboration among this Office, the Mauricio Gastón Institute for Latino Community Development and Public Policy at the University of Massachusetts Boston, and the Center for Collaborative Education in Boston. It was conducted under the leadership of principal investigators Miren Uriarte and Rosann Tung and by the following members of the research team: Michael Berardino, Jie Chen, Virginia Diez, Laurie Gagnon, Faye Karp, Sarah Rustan, and Pamela Stazesky. This report and its companion report may be downloaded at www.umb.edu/gastoninstitute and www.cce.org.

The Mauricio Gastón Institute for Latino Community Development and Public Policy was established in 1989 at the University of Massachusetts Boston by the Massachusetts State Legislature at the behest of Latino community leaders and scholars in response to a need for improved understanding of the Latino experience in the Commonwealth. The mission of the Institute is to inform policy makers about issues vital to the state's growing Latino community and to provide this community with information and analysis necessary for effective participation in public policy development.

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CHAPTER

1.

INTRODUCTION

On September 30, 2010 the Boston Public Schools (BPS) signed a settlement agreement with the U.S. Department of Justice and the U.S. Department of Education compelling the district to address inadequacies in the provision of services to English language learners,[1] inadequacies that the federal agencies judged were "implicating the District's obligations under the Equal Educational Opportunities Act of 1974, … and Title VI of the 1964 Civil Rights Act" (U.S. Department of Justice, 2010, p. 6). The document details the challenges faced by the district, both in correctly identifying students of limited English proficiency (LEP) and in providing appropriate educational services to them. The agreement provides ample detail of the remedial activities required of the district in regard to (1) the identification and placement of ELLs, (2) the instruction of ELLs in English as a Second Language and sheltered content instruction, (3) the characteristics and professional development of instructional staff, (4) the assessment and services to be provided to ELLs who are also students with disabilities, (5) the required communication with parents, and (6) the compensation for students who had opted out of programs for ELLs and had not received language support in their general education classrooms. The settlement agreement also gave direction as to the type of monitoring and reporting that would be required on the implementation of these activities by schools and the district (U.S. Department of Justice, 2010).

Some of these deficiencies had been previously documented by program reviews conducted by the Massachusetts Department of Elementary and Secondary Education (MDESE) and reported to the Massachusetts legislature. For example in 2008, MDESE raised concerns about the initial identification of ELLs and the waiver procedures used by the district to limit entry into ELL programs, about the process of reclassifying LEP students once they had acquired English proficiency, and about their access to non-academic programs. MDESE also raised questions about the standard of quality of educational services available to ELLs enrolled in general education programs and about the process the district used to monitor the performance of former LEP students (FLEP students). Finally, the state also raised concerns about the fact that one-third of the teachers providing services to ELLs were not licensed in ESL, particularly in schools without formal ELL programs (MDESE, 2008a). A similar report, in 2009, focused attention on the requirements of the assessment of and parental communication about the needs of LEP students who are also students with disabilities (LEP-SWDs) (MDESE, 2009a)

Researchers analyzing the enrollment and performance of ELLs in BPS in 2009 also found that the district had faced serious challenges in the implementation of the state's new educational policy for English learners (Uriarte & Tung, 2009). In November 2002, Massachusetts voters approved Referendum Question 2, which evolved into Chapter 386 of the Acts of 2002 and was implemented in September 2003, replacing a 30-year practice of Transitional Bilingual Education (TBE) with Sheltered English Immersion (SEI).[2] This 2009 report, which examined enrollment and outcomes of ELLs from SY2003[3] (the year before the transition to SEI) to SY2006, documented that:

- Both the identification of students of limited English proficiency and their participation in programs for English language learners declined significantly, due to problems with the assessment of limited English proficiency and with the information provided to parents about the choices of programs for their children.
- The enrollment of students of limited English proficiency in special education (SPED) programs increased significantly in the four years of observation.
- The annual high school dropout rate among students in programs for English language learners also increased substantially, doubling in the period. In addition, the study documented a growing incidence of dropping out among middle school students.
- Large gaps in academic achievement persisted, as measured by the gap in ELA and Math pass rates in the test of the Massachusetts Comprehensive Assessment System (MCAS) between students in programs for English language learners and those in regular programs.

By the time the settlement agreement was completed in October 2010, significant changes had begun to take place in the district in order to address the deficiencies identified by the state agencies and by the researchers. With the coming of a new superintendent, new leadership was brought to the task. In 2009, a new director of English language learner programs was appointed as an assistant superintendent and a member of the district's leadership team. The Office of English

Language Learners (OELL) has attempted to identify the sources of the problems of assessment and placement as well as those related to the disparities in academic outcomes found between ELL students and their English proficient counterparts (OELL, 2009). The changes undertaken by the district prior to the intervention of the U.S. Departments of Justice and of Education are, in fact, documented in the settlement agreement. They include: (1) the re-assessment in SY2009 and SY2010 of over 7000 students who had been previously mis-assessed or not assessed at all; (2) notification of principals about the changes in staffing required to comply with the needs of ELLs beginning in the fall of 2010; (3) plans by each of the 135 schools detailing how the needs of ELLs would be met; (4) the provision of compensatory services in the form of summer classes in Summer 2010 for students who had not received services; (5) notification of parents of new and reassessed LEP students about the language status of their child, the programs and services available to them, and the availability of compensatory services; and (6) the development of new High Intensity Literacy Training for students with interrupted formal education (HILT-SIFE) and SEI Multilingual and Language Specific programs. In addition the district committed $10 million to improve services to ELLs in SY2010 and SY2011 (U.S. Department of Justice, 2010, pp. 7-8). By October 2010, the Boston School Committee named a Task Force on English Learners with the charge to "improve the academic achievement of students whose first language is not English."[4]

Identifying Success in Schools and Programs for English Language Learners in Boston Public Schools, of which this report is one part, is a project commissioned by the Boston Public Schools as part of this process of change set in motion by the intervention of the state and the federal governments on behalf of Boston's English language learners. The project is being conducted at the request of the Office for English Language Learners and is a collaboration among this Office, the Mauricio Gastón Institute for Latino Community Development and Public Policy at the University of Massachusetts Boston, and the Center for Collaborative Education in Boston.

The research aspect of this project entails two parts. The first, contained in this report, is a quantitative analysis of enrollment and educational outcomes for Boston's ELLs in SY2009 (with selected analyses of trends between SY2006 and SY2009). This analysis supports aspects of the required monitoring of English language learner programs and provides the district with the 2009 baseline that will support its ongoing assessment of programmatic strengths and weaknesses as it undertakes the brisk process of improvement in the programs offered to English language learners. The project also entails a close, qualitative examination of the practices at four BPS schools which are "beating the odds" in educating ELLs. Detailed case studies of the four schools were conducted: two of the schools performed substantially above the level that would be predicted by their demographic characteristics alone and two showed recent, steady improvement in outcomes controlling for any changes in student demographics. These case studies appear in a companion report entitled ***Learning from Consistently High Performing and Improving Schools for English Language Learners in Boston Public Schools***.

This report begins with an explanation of the approach taken to conduct the quantitative analysis, followed by its findings regarding the enrollment and demographics of students in different types of programs and schools of different characteristics. This is followed by a discussion of the educational outcomes of LEP students that considers their demographic characteristics, the characteristics of the schools in which they are enrolled, and the types of programs in which they participate.

[1] Several terms are used to refer to students whose verbal, reading and/or writing skills in English are limited. The terms English Language Learners (ELLs), English Learners, and students of limited English proficiency (LEP) are often used interchangeably. In this report we use the term students of limited English proficiency (and LEP students) to refer to those students who are native speakers of a language other than English and who are unable to perform ordinary classroom work in English. This is the definition used by the Massachusetts Department of Elementary and Secondary Education (MDOE, 2004). We also use the term English language learners (ELLs) or English learners to refer to these students, without regard to their program placement in the Boston Public Schools.

[2] Question 2 in Massachusetts was part of the U.S. English movement that spearheaded successful ballot referendum initiatives in different states under the slogan "English for the children." Referendum Question 2 was adopted by voters in Massachusetts in November 2002. It became law as Chapter 386 of the Acts of 2002 and implemented in September 2003. In Massachusetts, Transitional Bilingual Education (TBE) programs were substituted with Sheltered English Immersion (SEI) programs whose main purpose is to teach English language acquisition and content instruction at the same time, and in with the goal of transitioning English Language Learners into regular programs after one year.

[3] In this report, we use SY as an abbreviation for school year. SY2009 refers to the school year beginning in fall 2008 and ending in spring 2009.

[4] Boston Public Schools, School Committee launches task force on English Language Learners. November 5, 2009. http://www.bostonpublicschools.org/node/3769

CHAPTER

II.

THE STUDY

English language learners, their teachers, and the schools and programs where they are enrolled face a triple challenge: students must be taught and learn English at a level of proficiency high enough to allow them access to academic content; students must be taught and learn academic content at a level comparable to that of English proficient students; students must actively engage with learning and schools and programs must effectively engage students so that they graduate from high school. Improving Educational Outcomes of English Language Learners in Schools and Programs in Boston's Public Schools seeks to assess the academic performance of English language learners in Boston Public Schools in relation to these three challenges. It compares the achievement of ELLs with that of other BPS populations defined by English proficiency and assesses the outcomes of ELLs in different programs and types of schools.

A Research Questions

The quantitative study uses various types of administrative data to assess enrollment patterns and educational outcomes of English language learners in order to answer the following five research questions:

Q1. What were the enrollment patterns of ELLs in Boston and how did they change between SY2006 and SY2009?
The identification of ELLs and their enrollment in programs in Boston schools has been a concern since the implementation of Chapter 386 in SY2003. In this study, we compare enrollment patterns of ELLs across time and with those of other BPS students.

Q2. How did the engagement and academic outcomes of ELLs compare to those of other BPS student populations in 2009? Did the outcomes of LEP students change over the period of observation (SY2006-SY2009)? How did outcomes differ for LEP students at different levels of English proficiency?
Engagement indicators, dropout rates and outcomes on the Massachusetts Comprehensive Assessment System (MCAS) in English Language Arts, Math and Science are compared among different BPS sub-populations defined by English language proficiency (see Table 2 for a description of the outcome variables). This analysis is conducted by grade level and, among ELLs only, by English language proficiency as measured by the Massachusetts English Proficiency Assessment (MEPA). The school year of 2008-09 (SY2009) was chosen because of the availability of data. In the spring of 2010, when this study was commissioned, enrollment, dropout, and testing data were complete only up to 2009.

Q3. What were the engagement and academic outcomes of ELLs in schools of different characteristics?
Available descriptors of BPS schools are used to define the characteristics of schools and the enrollment and educational outcomes of ELLs in schools with these characteristics. School-level variables include grade configuration, size, school poverty rate, concentration of LEP students in the school, teacher quality, and school's accountability status. A description of these variables appears in Table 2.

Q4. What were the engagement and academic outcomes of ELLs in different types of programs?
The same outcome variables are assessed in relation to the different types of programs in which LEP students are enrolled in BPS. These programs include SEI Multilingual, SEI Language Specific, TBE, Two-Way Bilingual programs, SIFE and HILT-SIFE programs, and general education programs. For a description of these programs see Table 2.

Q5. What were the individual- and school-level factors most relevant to the outcomes of ELLs?
Using hierarchical linear modeling (HLM) we assess the relative effect of individual- and school-level factors on MCAS ELA and Math outcomes of LEP students at elementary, middle school, and high school levels.

B Defining the Population of English Language Learners in Boston Public Schools

This study focuses on the enrollment and educational outcomes of English language learners in BPS schools and programs and, therefore, English proficiency is a key demarcation in the comparison among student populations. In addition, among English language learners program participation is a key experience. Table 1 presents this study's perspective on the different populations of BPS students using the proportions existing in 2009. The main focus of this study is on the students

represented by the blocks in different tones of orange: students of limited English proficiency and the programs in which they participate.

In the first row (gray) appears the total BPS enrollment in SY2009: 58,957 students in grades Pre-K to 12. Of these, 36,168 (61.3%) are native English speakers (NES) and 22,789 (38.7%) are Native speakers of a language other than English (NSOL), represented in the light gray row. Native language is the first criterion used by MDESE to identify a student of limited English proficiency, who must be a native speaker of a language other than English (NSOL). The most prevalent native languages other than English in BPS include Spanish, several dialects of Chinese languages, Vietnamese, Cape Verdean Creole, Haitian Creole, Portuguese, and Somali. NSOL students may or may not be proficient in English.

The blue and orange row presents the enrollment of BPS students by English language proficiency. In dark blue are included students who are native English speakers as well as students who are native speakers of a language other than English and are English proficient (NSOL-EP) or who are former LEP students, i.e.,"FLEPs." In orange are the students who, in SY2009, were determined to be of limited English proficiency. The Department of Elementary and Secondary Education defines students of limited English proficiency as students whose first language is not English and who are unable to perform ordinary classroom work in English (MDOE, 2004). In SY2009, of the 22,789 students whose native language was not English (NSOL), just over half, 11,690 (or 51.3%) were students of limited English proficiency. A smaller but sizeable proportion (48.7%) had been determined to be proficient in English, although they spoke it as a second language, and had been determined to be capable of doing school work in English. LEP students are often referred to as English learners (ELs) or as English language learners (ELLs). In this study we follow the convention of the MDESE and refer to them as students of limited English proficiency or LEP students but also use also the term English language learners throughout the report. The bottom row represents the program participation of BPS students, in this instance focused on whether or not students attend a program for English language learners. Of the 11,690 students who were of limited English proficiency, 59.6% (or 6,972) were enrolled in programs for ELLs. They accounted for 11.8% of the total enrollment of BPS. Most of them were enrolled in SEI programs.

About 40.4% of LEP students were enrolled in programs that were not specifically developed for ELLs (4,718 students in SY2009). These were students who had been determined to be of limited English proficiency (and therefore unable to do class work in English) but whose parents "opted out" of their enrollment in ELL programs or, as we shall see in the enrollment section, students who had been transferred out of ELL programs so that they could participate in SPED programs that do not include language support services. These students could be in general education programs and/or at different levels of special education programs or other programs in BPS. Because of the difficulty in assessing the specific placement, we report on these students under the general label "not in ELL programs."

Table 1. Enrollment Defined by Native Language, English Language Proficiency, and ELL Program Participation, Grades Pre-K to 12. BPS, SY2009

<table>
<tr><td>Total</td><td colspan="5">All BPS (58,957)</td></tr>
<tr><td>Native Language</td><td colspan="2">Native English Speaker (NES) (36,168)</td><td colspan="3">Native Speakers of Other Languages (NSOL) (22,789)</td></tr>
<tr><td rowspan="2">Language Proficiency</td><td colspan="3">English Proficient (EP) (47,267)</td><td colspan="2" rowspan="2">Limited English Proficient (LEP) (11,690)</td></tr>
<tr><td>NES (36,168)</td><td>NSOL-EP (7,715)</td><td>FLEP (3,384)</td></tr>
<tr><td>Program Participation</td><td colspan="3">Not in ELL Program (47,267)</td><td>Not in ELL Prog (4,718)</td><td>In ELL Prog (6,972)</td></tr>
</table>

C Sources of Data

In order to address the research questions, we drew from several sources of student-level data that have been combined into one comprehensive database. The sources include:

Demographic and Enrollment Information. This information was obtained from the Student Information Management System (SIMS) on each BPS student enrolled for each school year (SYs 2006 to SY2009).

Testing Data. Using a randomly generated unique identifier for each student, results from the Massachusetts Comprehensive Assessment System (MCAS) and for LEP students, the Massachusetts English Proficiency Assessment (MEPA) were merged with the SIMS data file, thus allowing for the analysis of academic outcomes.

School Descriptors. School-level variables which were not available from the SIMS, MCAS, or MEPA data files were downloaded from the appropriate MDESE websites and merged with the student level SIMS and testing data in order to conduct analyses at the school level. In this case, the same value for the school level variable was assigned to each student attending that school.

Program Enrollment Data. For SY2006 to SY2008, ELL program enrollment data available through SIMS are used. The SIMS data element for ELL program participation includes only the categories of SEI, Two-Way, and "other bilingual education." BPS's Office of English Language Learners desired more specific information about their programs and, over time, had collected and logged data about enrollment in their programs. Therefore, we worked with their data to further disaggregate the ELL program offerings in SY2009. For this year only, we present SEI programs disaggregated by type (Multilingual or Language Specific, the latter by language) and "other bilingual education" programs disaggregated into Traditional TBE and SIFE programs. The latter are further disaggregated into Multilingual and Language Specific (HILT-SIFE, by language). The research team worked with the OELL to identify the specific programs in which students participated school by school, based on OELL information and the ELL student's native language. These data were then entered by hand into a school database and SPSS syntax specific to each school with an ELL program was developed for the student-level database to recode the SIMS variable into the expanded list of programs. Because of the labor-intensive work required, and with the approval of OELL, only the data for SY2009 were hand-entered and therefore the detailed level program data for other years are not available.

D Definitions of the Demographic, Program, School, and Outcome Variables Used in the Study

Table 2, below, presents the outcome variables used in this study as well as the demographic, program, and school-level variables analyzed. It also presents the operational definition of each variable as well as the specific data source from which the data are derived.

After cleaning and compiling the data files, basic frequencies and cross-tabulations were conducted. Specific aggregations of categories often responded to the needs expressed by OELL. Appropriate statistical tests were used to determine the significance of the differences in outcomes among populations and among LEP students enrolled in schools showing different characteristics and in different types of ELL programs. Finally, hierarchical linear modeling was used to determine the relative effect of individual and school-level factors on MCAS ELA and Math outcomes of LEP students at elementary, middle school, and high school levels.

A full discussion of the development of the database, the limitations posed by the data, and the analyses conducted appears in Appendix 1: Methods.

Table 2. Variables, Definitions, and Sources of Data

Variable	Definition	Source
Demographic Characteristics		
Gender	Gender of student.	SIMS
Income	We defined low-income status as a student who is eligible for free or reduced price lunch.	SIMS
Native Language	Language a student has learned from birth. Also known as first language.	SIMS
Mobility	We defined mobile students as any student who changed schools between October and June of a given school year.	SIMS
SWD	A student with a disability (SWD) is a student participating in special education programs: full inclusion, partial inclusion, and substantially separate classrooms. We report only on SWDs ages 6+, K-12.	SIMS
English Proficiency Level	The English proficiency level of LEP students as measured by MEPA in 1 to 4 (SY2006-SY2008) or 1 to 5 (SY2009) categories. The English proficiency level of LEP students is used both as an individual descriptor and as an outcome when discussing progress in English language acquisition.	MEPA Database
Program Level Variables		
In ELL Program	Student enrolled in a program for English language learners (and not in a general education program). A student in an ELL program may or may not also be a student with a disability receiving special education services or a student in an alternative education program.	SIMS
In SEI	Student enrolled in a Sheltered English Immersion program. SEI programs in BPS are of two types: Multilingual (students in these programs speak different languages) or Language Specific (students all speak the same language and support for students and families is available in that language).	OELL and SIMS: SY2009 SIMS: SY2006-SY2008
In Two-Way Bilingual	Student enrolled in a Two-Way Bilingual program. These are programs where fluent speakers of English and English language learners learn to become bilingual and bi-literate in a second language.	OELL and SIMS: SY09 SIMS: SY2006-SY2008
In TBE	Student enrolled in a Transitional Bilingual Education program. Transitional Bilingual Education models promote a gradual reduction of instruction in the primary language as students learn English. This model's major goal is for students to build the capacity to learn solely in English.	OELL and SIMS: SY09 SIMS: SY2006-SY2008
In SIFE	Student enrolled in a program for students with limited and/or interrupted formal education and who do not have the educational skills that are needed to perform grade level academic work. High Intensity Literacy Training is available for SIFE students in language specific programs. Multilingual SIFE programs enroll students from diverse linguistic backgrounds.	OELL and SIMS: SY2009 SIMS: SY2006-SY2008
Not in Program for ELLs	A LEP student whose parent has opted out of enrolling their child in an ELL program, or, a LEP student who is otherwise not enrolled in an ELL program. A student not enrolled in an ELL program may or may not also be a student with a disability receiving special education services.	SIMS
School Level Variables		
Grade Configuration	PK to 2; Elementary (K-5), K-8, Middle (6-8), High (9-12); Middle/High (7-12) and K-12 For MCAS results and for the HLM analysis, grade level is used (i.e., elementary, middle school and high school)	SIMS
School Size	Size of school enrollment. We used Wasley et al (2000) to define sizes and considered the following categories: large (>= 600 students), medium (350-599 students), and small (<350 students) for elementary schools; and large (>= 1000 students), medium (500-999 students), and small (<500 students) for MS and HS.	SIMS

School Poverty Rate	Proportion of enrollment that is eligible for a free or reduced price lunch.	SIMS
Density of LEP students	Percentage of enrollment that is of limited English proficiency (LEP). A LEP is defined by MDESE as "a student whose first language is a language other than English who is unable to perform ordinary classroom work in English."	SIMS
Accountability Status	A school's Adequate Yearly Progress (AYP) data for the selected year. We report on the AYP aggregate for ELA and Math.	MDESE Website
Teacher Qualifications	Two teacher qualification variables are analyzed: (1) Percentage of teachers who are licensed with Provisional, Initial, or Professional licensure to teach in the area(s) in which they are teaching (2) The percentage of a school's core academic classes taught by teachers who are highly qualified. These teachers, measured in "full-time equivalency," of core academic classes meet the NCLB definition of highly-qualified. To meet the definition, teachers must hold a valid Massachusetts license *and* demonstrate subject matter competency in the areas they teach.	MDESE Website
Engagement and Outcome Variables		
Median Attendance Rate	The attendance rate measures the percentage of school days in which students have been present at their schools. We report the median.	SIMS
Out-of-School Suspension Rate	The out-of-school suspension rate is the ratio of out-of-school suspensions to the total enrollment during the year.	SIMS
Grade Retention Rate	The proportion of students required to repeat the grade in which they were enrolled the previous year.	SIMS
Annual Dropout Rate	The annual dropout rate reports the percentage of students who dropped out of school in a specific year (MDOE, 2007). We follow the MDESE dropout methodology (MDESE, 2010) and include in the annual dropout rate students who dropped out in the summer prior to a given school year as well as students who dropped out during the given school year. We report on both the high school and middle school annual dropout rate. MDESE reports only on the high school dropout rate, labeling as truancy the dropout rate in middle school.	SIMS
English Proficiency Level	See description above.	MEPA Database
MCAS Pass Rates in ELA, Math and Science	Pass rates are the sum of the proportions of students scoring in the Advanced, Proficient, and Needs Improvement performance categories in MCAS exams on these subjects in a given grade in a given year.	MCAS Database

[1] This may happen because parents want a complete immersion for their child or because there are no ELL seats in a preferred school.

[2] Brief definitions of these programs appear in Table 2; fuller definitions can be found in Chapter V.

[3] The research team was aided by the meticulous data collection of OELL contained in the following documents and files: For HILT-SIFE Programs: Literacy Programs, Elementary, Middle School and High School for SY 2006, 2007, 2008, and 2009; For Two-Way Programs: Spanish SRI Testing Schedule, SY2006, 2007, 2008 and 2009; For SEI Programs: Boston Public Schools' English Language Learning Programs for English Language Learners, SY 2006 and 2009 and Excel files showing all LEP students compiled by the Office of Research, Assessment and Evaluation for OELL in 11/10/2005, 12/05/2006, 11/08/2007 and 10/28/2008.

CHAPTER

III.

ENROLLMENT AND CHARACTERISTICS OF ENGLISH LANGUAGE LEARNERS

This chapter presents the enrollment and individual characteristics of Boston Public Schools' student populations defined by English proficiency. In doing so, we focus on the comparison between English proficient students and students of limited English proficiency. In the case of enrollment we also provide information on the enrollment trends of sub-groups of English proficient students. We repeat the chart below to highlight the populations focused upon in this chapter.

Total	All BPS				
Native Language	Native English Speaker (NES)		Native Speaker of Other Languages (NSOL)		
Language Proficiency	English Proficient (EP)			Limited English Proficient (LEP)	
	NES		NSOL-EP	FLEP	
Program Participation	Not in ELL Prog			Not in ELL Prog	In ELL Prog

A What Is the Enrollment of BPS Populations Defined by English Proficiency, and How Has This Enrollment Changed through Time?

Between SY2006 and SY2009, overall BPS enrollment decreased from 61,374 to 58,957 students. A similar trend, albeit more pronounced, was observed among all English proficient students, most particularly native English speakers (NES) and English proficient students who are native speakers of a language other than English (NSOL-EP), among whom enrollment fell by 6.1% and 23.1% respectively in this period (Figure 1).[1]

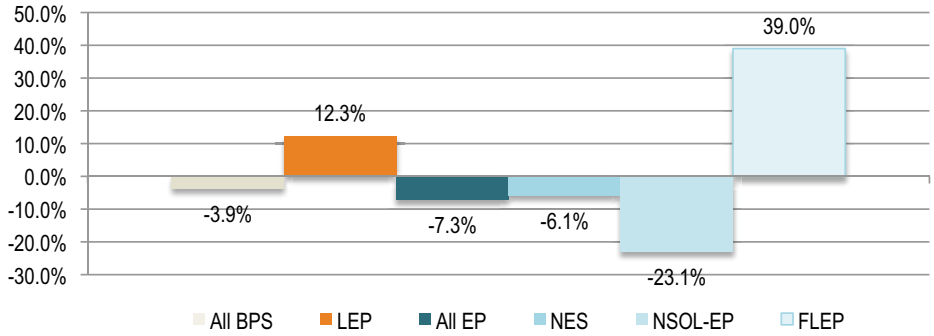
During this period, the only sub-populations defined by language that experienced growth were students of limited English proficiency and students who were formerly classified as of limited English proficiency but who had become proficient in English. These students are commonly labeled FLEPs, or former LEP students.[2] This group experienced a growth of 39.0%, largely due to re-classification.[3]

The number of students of limited English proficiency has also increased since SY2006, albeit at a somewhat less dramatic pace: from 10,405 to 11,690 students or 12.3%. By SY2009, LEP students accounted for almost 1 out of every 5 students in BPS, a proportion that increased steadily through the period of observation. But the high LEP student enrollment in SY2009 is still 20.5% below the enrollment in Transitional Bilingual Education (TBE) programs in SY2003, before the steep decline between SY2003 and SY2005 that followed the early implementation of Referendum Question 2 (Tung, et al., 2009). At the start of SY2004, 43.0% of all LEP students were de-designated as students of limited English proficiency (referred to usually as "FLEPed") and removed from TBE programs (Tung et al., 2009).

Table 3. Enrollment of Student Populations Defined by English Language Proficiency, Pre-K to 12. BPS, SY2006-SY2009

	SY2006		SY2007		SY2008		SY2009	
	N	%	N	%	N	%	N	%
All BPS	61,374	100%	59,896	100%	59,321	100%	58,957	100%
All English Proficient	50,969	83.0%	39,382	82.4%	48,394	81.6%	47,267	80.2%
NES	38,504	62.7%	37,419	62.5%	36,651	61.8%	36,168	61.3%
NSOL-EP	10,030	16.3%	9,126	15.2%	8,442	14.2%	7,715	13.1%
FLEP	2,435	4.0%	2,837	4.7%	3,301	5.6%	3,384	5.7%
LEP	10,405	17.0%	10,514	17.6%	10,927	18.4%	11,690	19.8%

Figure 1. Change in Enrollment of Student Populations Defined by English Language Proficiency, Pre-K to 12. BPS, SY2006-SY2009



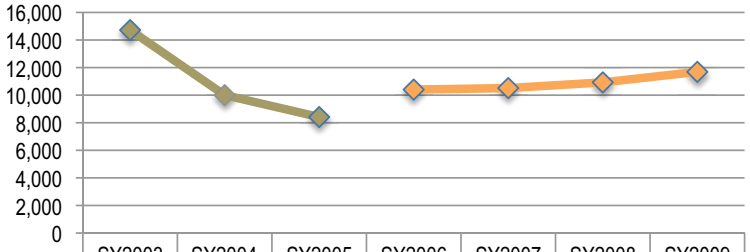
IN DEPTH:

Enrollment of English Language Learners through Time

Although LEP student enrollment has steadily increased since SY2006, by the end of the study period (SY2009) it had not yet reached the high enrollments experienced before the implementation of the changes that derived from Referendum Question 2. In the chart below we show, on the left, the results of the analysis by Tung et al. (2009) of the enrollment of LEP students between SY2003 and SY2006. On the right, in orange, are the results of the analysis conducted for this study.

By SY2011, LEP student enrollment had reached 15,702, surpassing for the first time the enrollments of SY2003 under TBE. Today, ELLs account for 28.0% of all BPS students.

Figure 2. LEP Student Enrollment, Pre-K to 12. BPS, SY2003-SY2009



	SY2003	SY2004	SY2005	SY2006	SY2007	SY2008	SY2009
LEP Enrollment	14,720	10,005	8,413	10,405	10,514	10,927	11,690

Source for data for SY2003-2005 is Tung et al, 2009.

B What Are the Characteristics of Student Populations Defined by English Proficiency?

Demographic characteristics such as gender, race, and income have been amply documented as important factors in educational outcomes. Among English language learners, proficiency in English is also a key variable as are the rate of mobility and the presence of disabilities. In this section we present the individual characteristics of English proficient students and of students of limited English proficiency. We focus also on the characteristics that have been shown in the literature to be of importance in relation to the educational achievement of ELLs and for which there were data available through the sources of administrative data used in this study.

For example, the effect of gender has been well documented in the literature on school achievement, where in some cases it has been found to favor females and on others males (Brown, Nguyen, & Stephenson, 2010; Callahan, Wilkinson, & Muller, 2010; Rumberger & Thomas, 2000; Wang, Niemi, & Wang, 2007). Similarly, poverty status is one of the strongest predictors of academic achievement (Braun, Jenkins, & Grigg, 2006; Hao & Bonstead-Bruns, 1998; Lee & Smith, 1999; Werblow & Duesbery, 2009) as it affects not only schooling but also a student's health status, nutrition, and the resources available to the student.[6] In most cases, the "income status" of students is determined by their "eligibility for free and reduced lunch," a federal program available to families whose household income is at or below 130% and 185%, respectively, of the federal poverty guidelines (U.S. Department of Agriculture, 2009). Closely related to income status as a factor in academic achievement is a student's geographic mobility –that is, his/her change of schools due to the family's physical move within a school year (Rumberger & Palardy, 2005; Rumberger & Thomas, 2000).

Race is also a well-documented marker of school achievement, both on its own and in its interaction with poverty and immigrant status in the life of students (see Kao & Thompson, 2003 for a review). Most researchers studying educational outcomes for ELL students rely on country of origin and/or ethnicity and/or native language, which in the case of immigrant students provides additional information beyond just the race variable.[7] But going beyond the descriptors and on to an understanding of the student's proficiency in English is critical to assess the educational outcomes of these students. Common sense, as well as the research (Dawson & Williams, 2008; Hao & Bonstead-Bruns, 1998; Wang et al., 2007), points to a strong relationship between English proficiency and educational outcomes, particularly when educational achievement is measured in English. In spite of this knowledge, reporting of most testing results at the district, state, and federal levels is not disaggregated by English proficiency level, thereby obscuring the true understanding of the achievement (and lack thereof) of ELLs.

Finally, we examine whether a student has been determined to be a student with disabilities. Research on achievement among ELL students (Wang et al., 2007) has found that special education status is significant although this variable is sometimes difficult to interpret as a result of the overrepresentation of ELL students in special education referrals (Hosp & Reschly, 2004). We include it here.

Table 4 presents selected characteristics of all BPS students, of students of limited English proficiency indicating those differences between LEP and EP students that are statistically significant. (For characteristics of sub-groups of English proficiency students see Appendix 2.)

Students of limited English proficiency show a higher proportion of males than females (53.6% are males) and a high (87.3%) proportion of students of low income. The vast majority (95.6%) classify themselves as non-white; the highest number identify themselves as Latino (59.4%), followed by Black (20.4%). Close to 13% of LEP students changed schools in SY2009 and 18.7% were determined to be students with disabilities.

In terms of native or first language, Spanish is the most prevalent first language of LEP students in BPS. Their proportion, however, declined slightly between SY2006 and SY2009. Spanish is the most prevalent native language in BPS after English. Native Spanish speakers represent a vast array of nationalities, races, and experiences. The most prevalent nationalities of Spanish speakers in the Boston area are Puerto Rican (who are also U.S. citizens), Dominicans, Salvadorans, and Colombians. These groups contain a mix of generations of immigrants and a mix of immigrant statuses, including large numbers of both U.S. citizens/permanent residents and undocumented.

Native speakers of Haitian Creole are the second most prevalent group among Boston's ELLs. Among LEP students, speakers of Haitian Creole have also declined from 9.8 to 9.0% between SY2006 and SY2009. Native speakers of Haitian Creole represent one of the largest immigrant communities in the city of Boston, with a long-standing presence nurtured by periodic spurts of immigration due to the economic situation in their country of origin. Among native speakers of Haitian Creole there is also a mix of immigrant generations and immigration statuses. Haitian Creole is the third most frequent native language found among BPS students, after English and Spanish.

Cape Verdean Creole is the third most prevalent language among LEP students and the sixth most prevalent first language at BPS. The proportion of LEP students whose first language is Cape Verdean Creole has increased from 6.9% to 8.2% in the period. There is a long-standing community of Cape Verdeans in Boston, constantly nurtured by new immigration from their island nation, with a mix of immigrant generations and immigration statuses in this group of students.

Chinese languages are the third most prevalent first language at BPS and the fourth among LEP students. The proportion of BPS students whose first language is one of the Chinese languages remained stable between 2006 and 2009, while among LEPs it declined from 8.1 to 7.8% in the same period. Like the other groups considered here, native speakers of Chinese languages come from a long-standing community with a sizeable core of U.S.-born Chinese Americans, multiple immigrant generations, and newer arrivals, leading to a broad array of immigrant statuses and experiences.

Vietnamese was the fifth most prevalent first language at BPS and among LEP students in SY2009. The proportion of LEP students whose first language is Vietnamese increased from 4.8% to 6.1% in the period. A community established as the results of the exodus that followed the end of war in Vietnam in the 1970s, Vietnamese native speak-

Table 4. Characteristics of Student Populations Defined by English Language Proficiency, Pre-K to 12. BPS, SY2009

	All BPS	EP[1]	LEP[1]
Total Enrollment	58,957	47,267	11,690
Gender (% Male)	51.9%	51.5%	53.6%
Low Income [2]	75.0%	72.0%	87.3%
Race/Ethnicity			
Asian	8.5%	7.0%	14.8%
Black	38.0%	42.4%	20.4%
Latino	38.2%	32.9%	59.4%
Multiracial	1.7%	1.9%	0.9%
Native American	0.4%	0.5%	0.1%
Pacific Islander / Hawaiian	0.1%	0.1%	0.1%
White	13.1%	15.2%	4.4%
Native Language			
English	61.3%	76.5%	NA
Spanish	21.6%	13.0%	56.6%
Haitian Creole	3.4%	2.0%	9.0%
Chinese Languages	3.6%	2.5%	7.8%
Vietnamese	2.8%	2.0%	6.1%
Cape Verdean Creole	2.6%	1.2%	8.2%
Portuguese	0.8%	0.5%	2.2%
Somali	0.7%	0.4%	2.1%
Other languages	3.1%	1.8%	8.1%
Mobile [3]	9.0%	8.0%	12.9%
SWD [4]	19.6%	19.5%	18.7%

Note: [1]The differences between EP and LEP students are statistically significant as measured by Chi[2] in relationship to gender, income, the proportion of mobile students, in the proportion of all native languages (in all cases p<.000) and in the proportion of students with disabilities (p=.009). Effect size in all cases is minimal or small. [2] Percent eligible for free or reduced priced lunch; [3] Percent of students who changed schools between October and June of a given school year. [4] Percent designated as a student with disabilities. Includes only students ages 6+ in K-12.

ers come from an immigrant community of multiple generations and situations. The first groups of Vietnamese came to the U.S. as refugees; others come now as a result of family reunification.

Native speakers of Portuguese are the sixth most prevalent group of LEP students at BPS. LEP speakers of Portuguese declined slightly (from 2.6% to 2.2%) between SY2006 and SY2009. Portuguese speakers come from several nationalities, although the most growth in recent years has come from the influx of Brazilians to Massachusetts and Boston. Brazilians are relatively recent newcomers and are in the U.S. under a variety of immigration statuses.

In 2009, Somali was the seventh most prevalent first language among LEP students (2.1%). Among LEP students, speakers of Somali also increased from 1.7% to 2.1% in the period. Somalis are relatively recent arrivals, part of a growing influx from Africa. Their presence is the result of the severe economic and social conditions in Somalia. Many Somalis have come to the U.S. as refugees.

There are 65 other native languages among BPS students and 55 other native languages among LEP students, but the proportion in each population is small. The proportion of students from these low-incidence languages has remained steady at about 3% of the total BPS enrollment and at about 8% among LEP students.

The comparison of the individual characteristics of the groups of English proficient students and LEP students showed that the differences between LEP and EP students were statistically significant in regard to gender, income, mobility, and proportion of students designated as students with disabilities. In terms of gender, LEP students showed a higher proportion of males than English proficient students. Among the latter, those designated as former LEP students (FLEPs) show a higher proportion of females than any other group considered here, suggesting that a higher percentage of LEP students who are females transition into English proficiency (Appendix 2).

In terms of income, although students eligible for free or reduced price lunch predominate across all BPS sub-groups, the proportion of low-income students is highest among LEP students, among whom it reaches 87.3%. Mobility was also most prevalent among LEP students, for whom it reached 12.9% in SY2009.[8] In 2009, the rate for LEP students designated as SWDs (18.7%) was below that of the district as a whole (19.6%). The differences between the groups along these four variables were statistically significant but in all cases the effect size was minimal or small.[9]

The comparison of the characteristics of LEP students between SY2006 and SY2009 shows that both the number and proportion of low-income students increased among English language learners as did the number (but not the proportion) of mobile students (Appendix 2). This made the population of English language learners slightly more male and poorer, but also slightly more stable. Over this period, the proportion of students scoring at the higher MEPA performance levels increased by 48.7% while those scoring at Level 1 decreased by 15.8% (Appendix 2), indicating a decline in the proportion of LEPs entering BPS soon after arriving in the U.S. The overall distribution of native languages remained roughly the same in the period, with Spanish speakers being overwhelmingly represented throughout the period, although their proportion in the LEP student population decreased slightly, from 58.2% to 56.6%. The fastest growing native language groups in this period were the Vietnamese (42.8% increase), the Somali (38.8% increase), and the Cape Verdean Creole speakers (33.5% increase). Finally, both the number and proportion of students with disabilities declined in this period, as a result of the transfer of LEP students with disabilities to general education programs (see full discussion of this in Chapter V).

In Sum

Following a swift decline in ELL enrollments between SY2003 and SY2005, enrollments between ST2006 and SY2009 steadily increased. This growth took place in the face of declines of the overall enrollment of BPS and of English proficient students.

Changes in the characteristics of LEP students show that the most salient have been in distribution of English proficiency in the population, with a decline in students at the lower proficiency levels and an increase at the higher levels of MEPA. This may indicate a decrease in the proportion of entry-level students (as a result of decreased immigration in the latter part of the decade). This observation is supported by the finding in the slight decrease of mobility in this population, also pointing to more stability.

Finally, significant differences between LEP and EP students were found. LEP students tended to have a significantly higher proportion of males, of low-income students, and of mobile students and slightly lower proportions of student with disabilities. Lower income and higher mobility are variables that have been shown to have significant negative relationship to student achievement.

[1] The NSOL-EP population is made up primarily of children of long-term first generation immigrants and students who are first generation immigrants themselves but who immigrated when very young. The decline in this population is remarkable and likely due to the movement of these more established populations out of the city and/or the enrollment of these children in charter and parochial schools.

[2] A LEP student becomes eligible to be re-designated as a FLEP when s/he scores at Level 4 or 5 on MEPA. Though districts may use their own discretion in this determination, MDESE guidance suggests using student's performance on MCAS, district assessments, teachers' recommendations, and other information about the student's academic performance. See MDESE (2009b).

[3] Of the 1,627 LEP students in SY2006 who became FLEP students by SY2009, 56% were native speakers of Spanish, 13.7% of Chinese languages, 7.9% of Haitian Creole, 7.6% of Vietnamese, 4.1% of Cape Verdean Creole, 2.4% of Portuguese, 1.3% of Somali, and 7.1% of other languages. Eighty-seven percent of the students who became FLEPs in this period were in ELL programs.

[4] Between SY2005 and SY2006, Tung et al. show a slightly lower rise in enrollment (to 9,726 LEP students) than data obtained for this study (10.405 LEP students).

[5] The source for SY2011 data is MDESE (n.d. d).

[6] For reviews of this literature see Rothstein (2004).

[7] Country of origin is not included in this study because, although SIMS collects data on immigrants' country of origin, it only collects this data for students who meet the federal definition of immigrants: a student who was not born in any U.S. state (including Puerto Rico as a state) and who must not have completed three full academic years of school in any state. Thus, for the purposes of this study, country of origin as collected by SIMS was not a meaningful variable.

[8] The group showing the most stability was former LEP students (FLEPs), among whom the proportion of mobile students was only 2.5%. See Appendix 2.

[9] Effect size is the measure of the strength of the relationship between two variables.

CHAPTER

IV.

ENROLLMENT AND CHARACTERISTICS OF ENGLISH LANGUAGE LEARNERS IN DIFFERENT TYPES OF SCHOOLS

One of the foci of this study is the influence of school factors on the achievement of English language learners in BPS. We begin this analysis by focusing on the characteristics of schools in which English language learners are enrolled and by comparing their experience with that of English proficient students in Boston Public Schools. They are: grade configuration, school size, school poverty rate, LEP density in the school, the school's accountability status, and the qualifications of teachers in the school. In this descriptive analysis, we focus on BPS's 137 schools and rely on available school characteristics. Description of these variables appears in Table 2 in Chapter II and also in Appendix 1.

Throughout this chapter we focus on the populations in the chart below, highlighting the comparison between LEP and EP students. Later in the chapter, we present the demographic characteristics of LEP students in different types of schools, using the demographic variables that were introduced in the previous chapter.

Total	All BPS				
Native Language	Native English Speaker (NES)		Native Speaker of Other Languages (NSOL)		
Language Proficiency	English Proficient (EP)			**Limited English Proficient (LEP)**	
	NES		NSOL-EP	FLEP	
Program Participation	Not in ELL			Not in ELL	In ELL

A What Are the Characteristics of Schools in which English Language Learners Are Enrolled? How Do These Schools Compare with Those in which English Proficient Students Are Enrolled?

To answer these questions we observed the proportion of the enrollment of students of limited English proficiency in schools showing different grade configurations, sizes, poverty rate, proportion of LEPs in the school, accountability status, and teacher qualifications. We compare along these variables with the enrollment of English proficient students.

Grade Configuration. The Boston Public Schools offers its students a wide array of grade configurations at all levels. These include Early Learning Centers (K-Grade 1), Elementary Schools (K-5), Elementary/Middle Schools (K-8), Middle Schools (6-8), Middle/ High Schools (7-12) and High Schools (9-12). There is some evidence that some grade configurations offer some advantages for students; for example, Klump (2006) and others have shown that K-8 schools are positive for middle school students because they create a more manageable social environment.

In SY2009, the largest proportion (43.2%) of LEP students attended elementary schools, followed by high schools (23.9%). K-12 and middle/high constitute the lowest proportions of total LEP enrollment. The most salient difference between the LEP and EP students is their enrollment in middle/high schools. Three out of the five schools at this configuration are exam schools, where LEP enrollment is negligible; in contrast these schools enroll 12.3% of the EP students.

School Size. Boston Public Schools moved aggressively during the last decade to decrease the size of its high schools with support first from the Carnegie Foundation and then from the Bill and Melinda Gates Foundation.[1] These initiatives were based on evidence that school enrollment size had a significant effect on student achievement and the likelihood of dropping out (Lee & Smith, 1999; Lee & Bryk, 1989).[2] Other scholars, such as Werblow and Duesbery (2009), Wang, Niemi, and Wang (2007), Nathan and Thao (2007), and Rumberger and Palardy (2005), have also found that smaller schools have a positive effect on engagement and achievement.

The specific size categories used in this study replicate those of Wasley et al. (2000, p. 15) in their study of school size in Chicago, which was based on the small school initiative of the city's School Reform Board of Trustees. The recommended

size of elementary schools was between 100 and 350 students and that of high schools below 500 students. Under these criteria, in SY2009, most elementary and middle schools in Boston would be considered "small," while most high schools would be considered "medium."

Among LEP students in elementary grades, the enrollment is evenly distributed across all school sizes; this distribution differs from the experience of English proficient students in elementary grades, among whom almost half attend a small school and only 19.6% attend a large one. Of students in middle school grades, the majority (64.9%) attend medium size schools and only 0.6% are enrolled in large schools. Among English proficient students a much higher proportion (16.0%) attend a large school. Among both high school LEP and English proficient students, the highest proportion attend large high schools.

Table 5. Enrollment of LEP and EP Students in Schools of Selected Characteristics, Pre-K to 12. BPS, SY2009

Characteristics of Schools	N of Schools	EP	LEP
Total Schools and Enrollment	137	46,907	11,690
Grade Configuration			
PreK-2	5	1.1%	3.0%
Elementary	62	34.3%	43.2%
K-8	17	12.9%	15.7%
Middle (6-8)	17	12.9%	13.0%
High (9-12)	29	25.3%	23.9%
Middle/High	5	12.3%	0.8%
K-12	2	1.2%	0.5%
School Size: Elementary School Grades			
Enrollment	25,260	19,110	6,150
Large (>= 600 students)	10	19.6%	31.2%
Medium (350-599 students)	22	31.9%	36.4%
Small (<350 students)	55	48.5%	32.4%
School Size: Middle School Grades			
Enrollment	11,943	9,973	1,970
Large (>= 1000 students)	3	16.0%	0.6%
Medium (500-999 students)	13	45.1%	64.9%
Small (<500 students)	26	38.8%	34.5%
School Size: High School Grades			
Enrollment	18,989	16,152	2,837
Large (>= 1000 students)	7	49.1%	43.8%
Medium (500-999 students)	27	8.3%	18.4%
Small (<500 students)	2	42.6%	37.8%
Poverty Rate[1]			
Poverty rate 25-75%	47	39.9%	18.4%
Poverty rate >75%	90	60.1%	81.6%
LEP Density			
0-10%	54		6.7%
10.1-30%	49		43.2%
30.1-50%	27		36.7%
>50%[2]	6		11.6%
Accountability Status [3]			
N of Schools/ Enrollment	132	46,740	11,483
Met AYP in ELA	59	48.5%	32.5%
Met AYP in Math	42	33.0%	15.0%
Teacher Qualifications[4]			
% of teachers licensed in teaching assignment, above district average (>97.9%)	96	63.7%	62.4%
% of core academic classes taught by highly qualified teachers, above district average (>95.9%)	94	65.6%	72.9%

Note: [1] No school in BPS had a poverty rate below 29.8%; [2] One school in Boston has LEP student density of over 90%, Boston International High School, a high school for newcomers. [3] AYP data for BPS schools are from MDESE (n.d. a). [4] The data on teacher qualifications come from MDESE (n.d. b)

School Poverty Rate. Income status is one of the strongest predictors of academic achievement, a relationship that is well recognized and documented (Braun et al., 2006; Hao&Bonstead-Bruns, 1998; Lee & Smith, 1999; Werblow&Duesbery, 2009). As was pointed out earlier, low-income students are affected by poverty's impact on a variety of areas of life including health status, nutrition, mobility due to unstable housing and employment, family's educational achievement, and the availability of community resources. The educational achievement among students in poverty is also affected by the overall rate of poverty in the school that they attend, which tends to compound the effect of individual income status on their achievement. According to Orfield and Lee (2005), part of what heightens the effect of school poverty on poor students is that high poverty rates in schools are often associated with the presence of less stable and less qualified teaching staff as well as fewer overall resources for students.

The U.S. Department of Education's National Center for Education Statistics has defined high-poverty schools as those in which more than 75% of students receive free or reduced price lunch and low-poverty schools as those in which 25% or fewer students receive free or reduced price lunch (National Center for Educational Statistics, 1998). Using these criteria, 66% of Boston schools qualify as high-poverty schools. There are no schools in Boston with poverty rates below 25%.

Although a large proportion of students in Boston go to a school in which the rate of poverty is high there are differences in this regard between English proficient – among whom 60.1% attend a high-poverty school – and student of limited English proficiency, 81.6% of whom attend a high-poverty school.

Density of LEP Students. Although there is some discussion about the effect of LEP density in a school on the education of English language learners, a prevalent perspective is that the segregation of English language learners in schools is deleterious because of the inherent social, cultural, linguistic, and educational isolation it implies (Arias, 2007; Capps, Fix & Murray, 2005; Cosentino de Cohen, 2005; Gándara et al., 2005; Ruiz de Velasco & Fix, 2000). But there are also arguments that, without advocating for over-concentration or lack of access to English speaking students, point to the obvious advantage of having a critical mass of LEP students in a school to facilitate the development of programs and so that teachers and staff become more culturally proficient and more effective in handing the specific needs of students and parents. By including this variable in this study we seek to ascertain the level of segregation of LEP students in Boston schools. We adopt Orfield and Lee's (2005) categories of segregation in school settings where over 50% concentration of one group – defined by race, poverty status, or language proficiency – represents "predominance," 90% concentration represents an "intensely segregated" school environment and 99% concentration indicated an "extremely segregated" school.[3]

Our data on LEP students in Boston Public Schools indicate that the majority of LEP students attend a school with less than 50% LEP density; that is, most LEP students (88.4%) are not segregated or attend a school where LEPs are predominant. Only six Boston schools have densities of LEP students of over 50% and they enroll only 11.6% of Boston's students of limited English proficiency. In SY2009, only one school – Boston International High School – showed a density of LEP students of over 90%, and this is a school whose mission is to work with entering immigrant students.

Accountability Status. The No Child Left Behind Act (NCLB) requires that schools, districts, and states develop and then work toward meeting specific performance goals in both Math and English Language Arts (ELA). In Massachusetts, the performance goal is that all students will achieve proficiency in both Math and ELA, as measured by the MCAS, by 2014. The Adequate Yearly Progress (AYP) reports document the progress of all students as well as students of specific subgroups toward this goal. Subgroups include racial/ethnic, income, disability, and those with limited English proficiency.

We measured the proportions of LEP and EP students enrolled in schools that met (and did not meet) Adequate Yearly Progress (in the aggregate) in SY2009. In both groups, the majority of students were enrolled in schools that did not meet AYP in ELA and in Math. But, the enrollment of LEP students in schools that did not meet AYP was substantially higher (32.5% among EP students vs. 48.5% LEP students in ELA and 15% vs. 33% among the same groups in Math).

Teacher Qualifications. The qualifications of teachers are a critical factor in the educational achievement of LEP students, a factor that is highlighted by the research as well as the efforts of districts, schools, and teachers themselves to promote professional development in an ongoing way (Braun et al., 2006, Munoz & Chang, 2008; Rumberger & Palardy, 2005; Rumberger & Thomas, 2000). The qualifications of teachers have been a concern in regard to English language learners because of the specialized training required to address issues of language acquisition and – in systems that restrict the use of languages other than English in the classroom – the appropriate instruction of both ESL and academic content to students. In many ways, the implementation of restrictive language policies in Massachusetts meant that teachers needed more, not less, training and that English learners were more exposed to the inadequacies in training of the teaching core.

Studies of teacher preparation for the implementation of Question 2 in Massachusetts show that there was cause for concern. In 2006, the start of the period of observation of this study, the Rennie Center (2007, p. 3) reported that just 35% of the estimated number of Massachusetts teachers requiring SEI content training had received it and that only 64.2% of the state's ESL training needs had been met. By 2009, the end of the study period, the Commissioner of Elementary and Secondary Education reported a conservatively estimated 33% to 42% of elementary and secondary content teachers were in need of the 4-category training but had not received it; (MDESE, 2009a). This finding echoed a study in California, a state where policies are similarly restrictive in the use of language other than English in the classroom (Rumberger & Gándara, 2005). Additionally, these researchers found that the inadequacies in teacher preparation went well beyond a specific readiness to address language acquisition and appropriately scaffolding content in the classroom. Rumberger and Gándara (2005) point out that ELLs are often exposed to more uncertified and beginning teachers, who lack essential pedagogical knowledge and skills, than are students who are native English speakers.

In this study we focus on the data on teacher qualifications available from MDESE, which include those variables required by the No Child Left Behind Act: the proportion of teachers who are licensed in their teaching assignment and the proportion of academic courses taught by highly qualified teachers (HQT). These data, available for each school and district in the state, provide a view of the qualification of teachers in a student's or a group of students' school, but do not indicate whether the student has access to the set of teachers who have these qualifications.

In Table 5, we present the proportion of both LEP and EP students enrolled in schools where the number of teachers licensed in their teaching assignment and the number of courses taught by highly qualified teachers are above the district's average. In Boston, the district average for the former is 97.9%, and for the latter is 95.9%.[4] We found that a slightly larger proportion of EP students (63.7%) than LEP students (62.4%) attend schools with a percentage of teachers licensed in teaching assignment above the district's average. A higher proportion of LEP (72.9%) than EP (65.6%) students are enrolled in schools where the proportion of core academic courses taught by highly qualified teachers is above the district average.

B What Are the Characteristics of English Language Learners Enrolled in Different Types of Schools?

In this section we attempt to understand the relationship between the demographic characteristics of LEP students and the characteristics of schools where they are enrolled. Table 6 presents the descriptive data and we focus the discussion in this section on those demographic variables that were significant in the distribution of students in schools of specific types.[5]

School Size. We compared the demographic characteristics of LEP students enrolled in large schools to those of LEP students enrolled in small and medium size schools. None of the demographic variables were found to be significant in the distribution of LEP students in elementary schools of different sizes. At the middle school level, where most LEP students are enrolled in small or medium size schools, several demographic variables were found to be significant in terms of enrollment in schools of different sizes. Students performing at MEPA Levels 1 and 2 constituted a significantly larger proportion of LEP student enrollment in large schools (77.8%) as compared to those enrolled in small or medium schools (33.9%). Students of low income constitut-

ed a significantly smaller proportion of enrollment in large schools (45.5%) as compared to those enrolled in small and medium size schools (90.0%). Finally, students with disabilities constituted a significantly smaller proportion of all LEP students enrolled in large schools (0%) as compared to those enrolled in small and medium schools (28.3%). At the high school level, the difference in LEP students' mobility rates was found to be significant, with LEP students in large schools having lower rates of mobility (12.5%) than their counterparts in small and medium schools (21.9%). The difference in the proportion of LEP students identified as having a disability was also found to be significant, with LEP students in large schools having higher disability rates (17.5%) compared to LEP students in small and medium schools (12.5%). Lastly, the differences in the distribution of LEPs at all levels of English proficiency between large schools and small and medium schools was found to be significant, with a larger proportion of students in large schools (36.3%) performing at MEPA Levels 4-5.

Low/High Poverty School. Mobility and MEPA performance levels were found to be significant in the distribution of LEP students in low/higher income schools. Higher proportions of mobile students and students scoring at the higher MEPA performance levels were found among schools with a poverty rate above 75%.

Density of LEP Students. Several variables were found to be significant in the distribution of LEP students in schools with LEP densities higher than 50% compared to those with lower densities: income, mobility, designation as an SWD and MEPA performance levels. Schools with 50% density of LEP students had higher proportions of low-income students, lower levels of mobile students and students designated as SWDs, and higher proportions of students at MEPA performance Level 4 and 5. In comparing low-density schools (<10%) to others, income status, designation as an SWD, and MEPA performance levels were also significant. These low-density schools showed high representation of low-income students, high representations of SWDs, and higher proportions of students at low MEPA performance levels.

AYP Status. The demographic variables found to be significant in the distribution of LEP students in schools that met/did not meet AYP status in ELA were low income and MEPA performance levels; a higher proportion of low-income students and higher proportions of students at the lower levels of MEPA performance were found among schools which did not meet AYP in ELA. None of the demographic variables were found to be significant in the distribution of LEP students in schools that met/did not meet AYP status in Math.

Teacher Qualifications. In regard to teacher qualifications, we considered two indicators: the proportion of teachers licensed in teaching assignment and proportion of classes taught by a highly qualified teacher. In regard to the first indicator, designation as an SWD and low MEPA performance levels were found to be significant in the distribution of students across schools with different proportion of teachers with this qualification. A higher proportion of LEP-SWD students and a higher proportion of students at MEPA performance Levels 1 and 2 were enrolled in schools with a lower proportion of teachers with these qualifications that is the average for the district.

The variables found to be significant in the distribution of LEP students in schools with different proportions of classes taught by highly qualified teachers were mobility and MEPA performance at Levels 1 and 2. A higher proportion of mobile students and students at lower MEPA performance levels were enrolled in schools with a low proportion of classes taught by highly qualified teachers.

Table 6. Demographic Characteristics of LEP Students Enrolled In Schools of Selected Characteristics, Pre-K to 12. BPS, SY2009

Characteristics of Schools	N of LEPs	Demographic Characteristics of LEPs						
		% Male	% Low Income[1]	% Mobile	% SWD[2]	English Proficiency Level[3]		
						% MEPA Levels 1 & 2	% MEPA Level 3	% MEPA Levels 4 & 5
All LEP Students	11,690	53.6%	87.3%	12.9%	18.7%	23.6%	32.0%	44.4%
Grade Levels								
Pre-K	717	50.9%	85.8%	11.4%	NA	NA	NA	NA
Elementary (K-5)	6,150	52.5%	91.6%	9.8%	17.6%	23.3%	29.1%	47.5%
Middle School (6-8)	1,970	56.9%	89.8%	16.3%	28.1%	23.9%	31.2%	44.9%
High School (9-12)	2,837	54.5%	76.9%	17.8%	14.7%	24.1%	40.4%	35.6%
School Size[8]								
In large elementary school	1,918	53.2%	91.2%	8.7%	18.5%	22.2%	30.9%	46.9%
In large middle school	11	45.5%[8]	45.5%[8]	0%	0%	-	-	-
In large high school	1,242	54.8%	77.7%	12.5%	17.5%	28.5%	35.2%	36.3%
Poverty rate[9]								
Poverty rate 25-75%[4]	2,150	53.5%	74.5%	16.0%	17.4%	28.8%	36.8%	34.4%
Poverty rate >75%	9,540	53.6%	90.3%	12.2%	19.0%	28.0%	33.5%	38.5%
LEP Density[10]								
0-10%	785	56.2%	82.8%	12.4%	33.0%	21.1%	39.6%	39.3%
10.1-30%	5,045	53.9%	86.5%	14.6%	20.6%	29.6%	33.6%	36.8%
30.1-50%	4,294	52.2%	87.9%	12.9%	15.4%	29.4%	35.0%	35.6%
>50%[5]	1,566	55.0%	90.7%	7.5%	14.1%	21.0%	31.7%	47.3%
Accountability Status[11]								
Met AYP in ELA[6]	3,736	53.7%	86.8%	12.7%	18.5%	25.9%	32.1%	42.0%
Did not meet AYP in ELA	7,747	53.5%	88.5%	12.5%	19.2%	28.6%	35.1%	36.2%
Met AYP in Math[6]	1,727	53.7%	87.4%	12.5%	18.5%	26.9%	34.2%	39.0%
Did not Meet AYP in Math	9,756	53.5%	88.0%	12.5%	19.1%	27.9%	34.2%	37.9%
Teacher Qualifications[12]								
% of teachers licensed in teaching assignment, above BPS average[7]	7,292	53.4%	87.5%	12.7%	16.7%	26.9%	34.0%	39.1%
% of teachers licensed in teaching assignment, at or below BPS average[7]	4,398	54.0%	87.0%	13.2%	21.9%	29.9%	34.3%	35.7%
% of core academic classes taught by highly qualified teachers, above BPS avg[7]	7,589	53.4%	88.6%	11.7%	20.0%	26.7%	34.5%	38.8%
% of core academic classes taught by highly qualified teachers, at or below BPS avg.[7]	4,101	54.0%	85.0%	15.2%	16.5%	30.2%	33.7%	36.1%

Notes: Dash indicates an n<10, which cannot be reported for reasons of confidentiality. [1] Eligible for free or reduced price lunch; [2] Includes students ages 6+ in K-12; [2] Values are for MEPA test-takers only (Elem MEPA test-takers=5,599; Middle School test-takers=1,694 and High School test-takers=2,058; [4] No school in BPS had a poverty rate below 29.8%; [5] Six schools have LEP densities of over 50%. One, Boston International High School, has a much higher LEP rate (90.3%) because it is a high school for newcomers. [6] Data on AYP cover only 11,483 students. Source for AYP data for BPS schools is MDESE (n.d. a). [7] The district's proportion of teachers licensed in teaching assignment at BPS schools is 97.9% and the proportion of core academic classes taught by highly qualified teachers in BPS is 95.9% (MDESE, n.d. b).

[8] At the elementary school level, differences in the demographic composition (among all variables displayed in this table) of students enrolled in large schools vs. not large schools were not found to be statistically significant. At the middle school level, between students enrolled in large versus not large schools, differences were found to be significant in terms of: income (p=.000, with small effect size) and SWD (p=.037), students scoring at MEPA 1-2 (vs. MEPA 3-5, p=.006), all with minimal effect size. At the high school level, between students enrolled in large vs. not large schools, differences were found to be significant in terms of: mobility (p=.000, with small effect size) and SWD (p=.000), students scoring at MEPA 1-2 (vs. MEPA 3-5, p=.016)), students scoring at MEPA 3 (vs. all other MEPA levels, p=.003), and students scoring at MEPA 4-5 (vs. MEPA 1-3, p=.003), all with minimal effect size.

[9] Comparing students enrolled in schools with a poverty rate greater than 75% to students enrolled in schools with a poverty rate at or below 75%, differences in demographic composition were found to be statistically significant in terms of: income (p=.000, with small effect size), and mobility (p=.000), students scoring at MEPA 3 (vs. all other MEPA levels, p=.007)), and students scoring at MEPA 4-5 (vs. MEPA 1-3, p=.007), all with minimal effect size.

[10] Comparing students enrolled in schools with a LEP density of 0-10% to students in schools with LEP densities greater than 10%, differences in demographic composition were found to be significant in terms of: income (p=.000), SWD (p=.000), and students scoring at MEPA 1-2 (vs. MEPA 3-5, p=.003) (all with minimal effect size). Comparing students enrolled in schools with a LEP density of 10.1-30% to students in schools with all other LEP densities, differences in demographic composition were found to be significant in terms of income (p=.022), mobility (p=.000), SWD (p=.000), and students scoring at MEPA 1-2 (vs. MEPA 3-5, p=.008) (all with minimal effect size). Comparing students enrolled in schools with a LEP density of 30.1-50% to students in schools with all other LEP densities, differences in demographic composition were found to be significant in terms of: gender (p=.023), SWD (p=.000), students scoring at MEPA 3 (vs. all other MEPA levels, p=.019), and students scoring at MEPA 4-5 (vs. MEPA 1-3, p=.019) (all with minimal effect size). Comparing students enrolled in schools with a LEP density greater than 50% to students enrolled in schools with a LEP density at or below 50%, differences in demographic composition were found to be significant in terms of: income (p=.000), mobility (p=.000), SWD (p=.000), students scoring at MEPA 1-2 (vs. MEPA 4-5, p=.000), students scoring at MEPA 3 (vs. all other MEPA levels, p=.000), and students scoring at MEPA 4-5 (vs. MEPA 1-3, p=.000), all with minimal effect size.

[11] Comparing students in schools that Met AYP in ELA to students in schools that did not meet AYP in ELA, differences in demographic composition were found to be significant in terms of: income (p=.011), students scoring at MEPA 1-2 (vs. MEPA 3-5, p=.023), students scoring at MEPA 3 (vs. all other MEPA levels, p=.000), and students scoring at MEPA 4-5 (vs. MEPA 1-3, p=.000) (all with minimal effect size). No differences in the demographic characteristics in students enrolled in schools that met AYP in Math as compared to students enrolled in schools that did not meet AYP in Math were found to be significant.

[12] Comparing students enrolled in schools with a proportion of teachers licensed in their teaching assignment above the district average to students enrolled in schools with a proportion of teachers licensed in their teaching assignment at or below the district average, differences in demographic composition were found to be significant in terms of: SWD (p=.000), students scoring at MEPA1-2 (vs. MEPA 3-5,p=.007)), students scoring at MEPA 3 (vs. all other MEPA levels, p=.006), and students scoring at MEPA 4-5 (vs. MEPA 1-3, p=.006) (all with minimal effect size). Comparing students enrolled in schools with a proportion of core academic classes taught by HQT above the district average to students enrolled in schools with a proportion of core academic classes taught by HQT at or below the district average, differences in demographic composition were found to be significant in terms of: mobility (p=.016) and students scoring at MEPA 1-2 (vs. MEPA 3-5, p=.029), all with minimal effect size.

In Sum

In this chapter we focused on the distribution of LEP students across schools of different types, analyzing first their enrollment in different types of schools and second the significance of demographic factors in their distribution across different types of schools. We found that LEP student enrollment shows several risk factors. First of all, we find that LEP students are overwhelming enrolled in a high-poverty schools (81.6%), at a much higher rate than English proficient students (60.1%), compounding the effects of individual student poverty in this population. Secondly, we find that they are overwhelmingly enrolled in schools that did not meet accountability status in ELA (77.5%) or in Math (85.0%). These factors sharply differentiate the experience of LEPs students in BPS from that of English proficient students.

On the positive side, we find that LEP students in Boston are not segregated or highly concentrated: 88.4% are in schools with less 50% LEP density. LEP students also tend to be enrolled in schools where a high proportion of core courses are taught by highly qualified teachers (72.9%).

We found also that two variables have broad significance in the distribution of students across schools of different characteristics: students' MEPA performance level and their designation as a LEP-SWD. MEPA performance level, particularly performance at the lower levels, was found to be significant in the distribution of students across schools showing all of the characteristics considered here. Designation as a LEP-SWD was also found to have broad significance in the distribution of students in schools of lower LEP densities and where a lower proportion of teachers are licensed in their teaching assignment. Other variables, such as mobility and income, were also found to be significant but they did not show the breadth of impact of the other two variables.

[1] See Boston Public School's Office of High School: www.highschoolrenewal.org/carnegieproposal.pdf and www.highschoolrenewal.org/gatesproposal.pdf (Accessed December 2007)

[2] There remains debate about the impact of the size of schools on children's academic success. Stevenson (2006) analyzes this debate in his statewide assessment of the effects of school size in North Carolina.

[3] Other options for categorizing LEP density appear in Parrish et al. (2006) and Williams et al. (2007).

[4] MDESE (n.d., b)

[5] Though the differences described in this section were found to be statistically significant, the effect size tended to be minimal.

CHAPTER

V.

ENROLLMENT AND CHARACTERISTICS OF ENGLISH LANGUAGE LEARNERS IN DIFFERENT TYPES OF PROGRAMS

One of the deepest and most far-reaching effects of the passage of Question 2 and the implementation of Chapter 386 has been on the programs for English language learners in Boston's public schools. The law specifically mandated the replacement of Transitional Bilingual Education (TBE) programs with Sheltered English Immersion (SEI) programs (Commonwealth of Massachusetts, 2002). TBE programs had been in place in Massachusetts since 1971, when the state was the first in the nation to mandate this specific model of education for English language learners in its public schools (Commonwealth of Massachusetts, 1971). For thirty years, this was the Massachusetts framework for the implementation of educational programs for children needing language support in their schooling. It was a model based solidly on the belief that the use of the native language in the instruction of ELLs favored their acquisition of a second language (English) while allowing students to remain at grade level in content areas (social studies, math, science). In response to Chapter 71A, districts developed a wide array of programs with a broad range of emphasis on the use of the native language. Programs were offered in Spanish, several Chinese dialects, Haitian Creole, Portuguese, Vietnamese, Cape Verdean Creole, Russian, and Greek among others.

Chapter 386 of the Acts of 2002 took a very different approach. It mandated Sheltered English Immersion, a model based on the belief that a second language (English) is acquired quickly when taught through meaningful content and effective interaction. It mandated that instruction rely on the use of simple English in the classroom to impart academic content, using students' native languages only to assist students in completing tasks or to answer a question. The law assumed students' time in SEI is "not normally intended to exceed one school year" (Commonwealth of Massachusetts, 2002) before they would transition into mainstream classrooms. The law allowed parents to request a waiver of enrollment in an SEI program; if granted, the child could attend an alternative bilingual education program (which must be offered when more than 20 children who speak the same native language at the same grade level in a school receive a waiver) (Commonwealth of Massachusetts, 2002). Waivers are cumbersome for both parents and schools, especially at the elementary school level. In 2003, and under great pressure from parents, Two-Way Bilingual programs were added to the category of programs that did not require an SEI waiver.

Upon the passage of Chapter 386, some believed that after a year of sheltering in a special program, ELL students could be educated in any classroom and by any teacher. The legislature left it to the state's Department of Education to develop guidelines for the implementation state, but MDESE provided little guidance (Tung et al., 2009). Instead it took steps to reduce the requirements of teachers instructing ELLs (by demoting bilingual licensure to an endorsement) and issuing recommended (not mandated) competency requirements for standard-curriculum content teachers that represent the most basic training required (English Language Learners Sub-Committee, 2009).

Tung et al. (2009) document the process of implementation of Chapter 386 in Boston. Using documents and interviews with BPS staff, they detail the confusion of the time: the belief by some that Chapter 386 meant that services to ELLs would disappear; the lack of clarity about SEI and about language and content instruction; the free hand given the principals to transform programs as they saw fit and with little guidance; the internal disagreements between departments about the definition of a LEP student; the waiver process and the process of assessment of students of limited English proficiency (pp. 40-42).

At the start of SY2004, the district promulgated three policy decisions with long-term consequences. First, BPS transferred a large number of ELLs into general education programs. Over four thousand students in Lau Stages 3, 4, and 5 made that switch at the start of the school year. Although many continued to be designated as LEP students, they stopped receiving language support services. It was the lack of services for these students that first caught the attention of the U.S. Departments of Justice and Education, discussed in the introduction to this report. But as we will see in the discussion in this chapter, it continues to be a very worrisome pattern.

Second, the district allowed for as much programmatic flexibility as possible under the new law in order to have the ability to respond to the diversity of Boston's ELL populations. Through the years, although SEI takes strong precedence over any other program in the district, Boston has shown a more diverse array of programs than other cities with large ELL populations in the state (English Language Learners Sub-Committee, 2009, p. 25). In a 2003 memo to the district, Superintendent

Thomas Payzant defined the programs the district would support: Multilingual ESL, Two-Way Bilingual programs, SEI and Native Language Literacy (Payzant, 2003). These have evolved into the current programs which we describe and discuss in this chapter: SEI Multilingual, SEI Language Specific, TBE, Two-Way Bilingual programs, and programs for students with interrupted formal education, SIFE, of which there are both Multilingual and Language Specific models.

The presence of Language Specific SEI programs also responds to an early policy decision: to allow TBE teachers and their students still in ELL programs to remain in the existing language-specific sites. This allowed TBE teachers to teach SEI and support student's language learning, it allowed schools to retain teaching resources and it facilitated communication with parents.

In this chapter, we discuss the enrollment of LEP students in different types of programs and observe the trends of these enrollments. We also focus on the characteristics of students enrolled in these programs. We focus on programs because most of the research related to the academic achievement of ELLs addresses the critical role of the programs in which students are enrolled. Lindholm-Leary and Borsato (2006) conducted an analysis of this literature and reported that programs designed for ELLs are an asset for these students and often lead to outcomes that surpass those of English proficient students. There is also a strong line of research on the outcomes of students in different types of programs designed specifically for ELLs. The review conducted by Lindholm-Leary and Borsato points to higher achievement in both math and English reading in bilingual and two-way programs than in SEI (Ramirez, 1992; Thomas & Collier, 2002), while studies of SEI emphasize the early language acquisition achieved under immersion programs. There are far fewer studies comparing the achievement of LEP students in ELL programs and those not in ELL programs. One such study by Thomas and Collier (2002) focused on four school districts with LEP enrollments and found that LEP students who had not participated in ELL programs had lower testing outcomes and higher dropout rates than students who had participated in any type of ELL program.

A What Are the Programs in which English Language Learners Are Enrolled? What Were the Trends in Their Enrollment Between SY2006 and SY2009?

While, as we saw in Chapter 3, the increase in the enrollment of LEP students in Boston schools was steady from SY2006 to SY2009, there were large fluctuations in the distribution of LEP students in programs in this period. This period saw a decline of 23.6% in the enrollment of LEP students in programs for English language learners and a 267.7% increase in the enrollment of LEP students in educational settings which are not specifically designed for the instruction of ELLs (for example, general education classrooms and special education programs). Most of this change took place between SY2006 and SY2007; in that period ELL programs lost 30.7% of their students. In SY2006, students in ELL programs accounted for 87.7% of all LEP students and by SY2009 the proportion of LEP students in ELL programs had declined to 59.6%. LEP students not in ELL programs experienced the opposite trend, increasing from 12.3% to 40.4% during this period.

In this section we present, first, a description of ELL programs and their enrollment followed by a discussion of the enrollments in programs not specifically designed for ELLs. As part of that discussion we focus on possible reasons for the growth in enrollment in the later programs and, specifically,

Table 7. Program Enrollment of LEP Students, Pre-K to 12. BPS, SY2006-SY2009

	SY2006	SY2007	SY2008	SY2009	Change in Enrollment	
					SY2006-SY2007	SY2006-SY2009
LEP Enrollment	10,405	10,514	10,927	11,690	1.1%	12.3%
In ELL Program	9,122	6,324	6,604	6,972	-30.7%	-23.6%
%	87.7%	60.1%	60.4%	59.6%		
Not in ELL Program	1,283	4,190	4,323	4,718	226.6%	267.7%
%	12.3%	39.9%	39.6%	40.4%		

the transfer of large numbers of LEP students from ELL programs to special education programs not designed for ELLs.

Enrollment in Programs for English Language Learners

Boston Public Schools offers several programs for English language learners: Sheltered English Immersion (SEI) (both Language Specific and Multilingual); Two-Way Bilingual programs; programs for Students with Interrupted Formal Education (SIFE) (both Language Specific/HILT-SIFE and Multilingual); and Transitional Bilingual Education programs. In presenting the enrollment data for the ELL programs, we use SIMS enrollment categories (SEI, Two-Way Bilingual, and other bilingual programs) which allow us to show the four-year trends for the enrollment in these programs (Table 8). Data that disaggregate programs further come from documents and databases of the Office of English language learners in BPS and are available only for SY2009 (Table 9).

Enrollment in Sheltered English Immersion (SEI) Programs. SEI became the approach of choice for educating English language learners in Massachusetts after the passage of Referendum Question 2 in 2002. It is the ELL program with the largest enrollment in the district. SEI is a model for teaching English language learners that relies on the use of simple English in the classroom to impart academic content, using students' native language only to assist students in completing tasks or to answer questions. BPS offers two types of SEI programs: Language Specific and Multilingual. SEI

Language-Specific programs are offered to students whose home language is Spanish, Haitian Creole, Cape Verdean Creole, Chinese languages, or Vietnamese. All students in an SEI Language Specific classroom speak the same language, and a bilingual/bicultural staff fluent in that language is available to students and their families. In a Multilingual SEI classroom, students are from various linguistic backgrounds and staff may or may not speak the language of the students or of their families.

In SY2009, there were 72 SEI programs in Boston serving 6,142 students. Although SEI programs have the highest enrollment of all ELL programs, the SY2009 enrollment represents a decline of 29.6% relative to SY2006. The majority of BPS SEI programs are Language Specific programs offered in seven languages. The highest enrollment is found among those offered in Spanish.

Enrollment in Two-Way Bilingual Education Programs.[1] Two-Way Bilingual programs provide fluent speakers of English and English language learners an opportunity to become bilingual and biliterate in a second language. In Boston, Two-Way Bilingual programs are offered for Spanish-speaking English language learners and students fluent in English on a lottery basis. Boston has three Two-Way Bilingual programs, all Spanish/English students in ELL programs.[2]

programs. Two-Way Bilingual programs begin in Kindergarten where students are instructed 90% of the time in a language in which they are fluent and the target language 10% of the time. By third grade, the languages of instruction are 50% in English and 50% in the target language and continue as a 50-50 model through the fifth grade, at which time students' transfer to secondary schools. The enrollment in two-way programs has increased from 277 students in SY2006 to 411 students in SY2009.

Enrollment in Transitional Bilingual Education Programs. TBE programs were the most prevalent approach to educating English language learners before 2002. Transitional Bilingual Education models promote a gradual reduction of instruction

Table 8. Change in Enrollment in Programs for English Language Learners, Pre-K to 12. BPS, SY2006-SY2009

	SY2006	SY2007	SY2008	SY2009	Change in enrollment SY2006-SY2009
In ELL Program	9,122	6,324	6,604	6,972	-23.6%
SEI	8,728	5,851	5,960	6,142	-29.6%
%	95.7%	92.5%	90.2%	88.1%	
Two-Way Bilingual	277	307	338	411	48.4%
%	3.0%	4.9%	5.1%	5.9%	
TBE & SIFE	117	166	306	419	258.1%
%	1.3%	2.6%	4.6%	6.0%	

Table 9. Enrollment in Programs for English Language Learners, Pre-K to 12. BPS, SY2009

	N of Programs[1]	Enrollment	
		N	%
Total ELL Programs and Enrollment	96	6,972	100%
SEI	72	6,142	88.1%
Multilingual	13	799	13.0%
Language Specific (All)	59	5,343	87.0%
Two-Way Bilingual[2]	3	411	5.9%
TBE[3]	2	147	2.1%
SIFE	19	272	3.9%
Multilingual	4	19	0.2%
Language Specific (All)	15	253	3.6%
Language Specific SEI Programs	59	5,343	100%
Spanish	34	3,273	61.3%
Haitian Creole	7	546	10.2%
Chinese languages	4	437	8.2%
Cape Verdean Creole	3	579	10.8%
Vietnamese	4	290	5.4%
Portuguese	4	136	2.5%
Somali	3	82	1.5%
Language Specific SIFE Programs	15	253	100%
Spanish	7	126	49.8%
Haitian Creole	4	73	28.9%
Cape Verdean Creole	3	36	14.2%
Somali	1	18	7.1%

Notes: [1]Source: OELL, List of BPS Schools and ELL programs, Jan 2009; [2] All Two-Way Bilingual programs are Spanish/English programs. [3]All traditional TBE programs are Chinese language programs.

in the primary language as students learn English. This model's major goal is for students to build the capacity to learn solely in English. In the Boston Public Schools, there are two Chinese language TBE programs. One hundred and forty seven students participated in these TBE-Chinese programs in SY2009.

Enrollment in Programs for Students with Limited or Interrupted Formal Education (SIFE). SIFE programs work with students of age 9 through high school age with limited or interrupted schooling, who do not have the educational skills that are needed to perform grade-level academic work. As in the SEI programs, BPS offers both Multilingual and Language Specific programs. Multilingual programs bring together students from various language groups while Language Specific programs focus on High Intensity Literacy Training provided in the native languages most prevalent among SIFE students in BPS (i.e., Spanish, Haitian Creole, Cape Verdean Creole, and Somali). SIFE programs have grown substantially in the past years and in SY2009, the 19 SIFE programs enrolled 272 students, 3.9% of all LEP students in ELL programs.

Enrollment in Programs Not Specifically for English Language Learners

In SY2009, over 40% of LEP students in BPS were enrolled in programs not specifically designed for ELL students. Of the 4,718 LEP students not in ELL programs, 71% were in general education programs and 28.5% were enrolled at different levels of special education programs.[3] This enrollment represented a growth of 267.7% (Table 7) over the enrollments in SY2006, when only 12.3% of LEP students were not enrolled in ELL programs. This pattern is not common in Massachusetts. In SY2009, Boston showed the highest proportion of LEP students in programs not for ELLs among the 10 districts in the state with the largest enrollment of ELLs (English language learners Sub-Committee, 2009, p. 9).

English language learners are enrolled in these programs in large numbers as a result of parental decision to opt out of ELL programs. Opting out may be due to parents' choice to seek a specific school placement where there may not be available programs for ELLs or because the parent is concerned about the quality of ELL programs or because they desire full immersion for their children's

education. There are no studies of the reasons for parents' decision to opt out of ELL programs in the public domain.

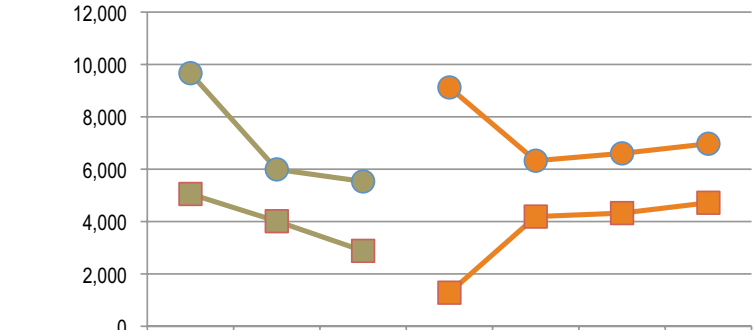
But parents' decisions have also been shaped by the particular way in which Boston implemented the "opting out" provisions of Chapter 386 (the legislation that set guidelines for the implementation of the changes required by Referendum Question 2). Chapter 386 included parental "waiver" provisions of the law allowing parents to petition to have their children exempted from SEI programs. This waiver did not disqualify students from enrolling in other models of programs for English language acquisition or from receiving language support services, even if enrolled in general education programs.[4] In Boston, enrollment of LEP students in general education programs continued to increase AND no services were provided to LEP students whose parents opted out of SEI.

Studies by the Office of English Language Learners showed that parents may have been encouraged to "opt out," as schools sought to fill "seats" left open by the steady decline in enrollments of populations in general education (OELL, 2009).[5] Once a parental petition to "opt out" was approved, Boston did not test, monitor, or provide language support services to these students (Tregar, 2008), although the student still retained LEP status and the district benefitted from the additional funding this entailed.

With No Child Left Behind in 2001 and most especially when Chapter 386 became law in 2002, assessment and monitoring of and service provision to all LEP students also became law, making this practice the center of MDESE's complaint against Boston for lack of compliance. In time, both MDESE and the federal Departments of Justice and Education found fault with Boston's assessment of LEP students, its process of parental information, its process of authorizing waivers and opt-outs (at the Family Resource Center rather than by principals and the superintendent, as required in some cases), and with its lack of provision of services to and of monitoring of students who were now enrolled in general education programs (MDESE, 2008a; U.S. Department of Justice, 2010).

Figure 3 presents the figures from SY2003 to SY2009 for LEP student in ELL programs and in programs not specifically designed LEP students. These data are drawn from two studies, Tung et al., 2009 and this study: we show this in the discontinuity of the lines.[6] The circles represent the enrollment of students in ELL programs and the squares that of students not in an ELL program. SY2003 was the year prior to the implementation of Question 2 and the data for the school years SY2003, 2004, and 2005 come from Tung et al., 2009. The data show that there have been TWO sharp declines in the enrollment in ELL programs. The first, taking place between SY2003 and SY2005, as discussed in the introduction to this chapter, was due to a policy decision on the part of the district to re-designate 4,366 LEP students in bilingual education programs as English proficient and insert them into general education as the implementation of Chapter 386 began in September 2003 (p. 40). By SY2006, enrollments in ELL programs, although still not reaching the high numbers pre-Question 2, had

Figure 3. Program Enrollment of LEP Students. BPS, SY2003-SY2009



	SY2003	SY2004	SY2005	SY2006	SY2007	SY2008	SY2009
In ELL	9,667	5,992	5,532	9,122	6,324	6,604	6,972
Not in ELL	5,053	4,013	2,881	1,283	4,190	4,323	4,718

Data for SY2003, 2004 and 2005 come from Tung et al, 2009.

Table 10. Characteristics of LEP Students Changing Program Enrollment from in an ELL Program to Not in an ELL Program. BPS, SY2006-SY2007

Total Making Change	2,536
% Male	58.5%
% Low Income[1]	87.3%
Native Language	
% Spanish	59.3%
% Cape Verdean Creole	6.2%
% Chinese languages	6.3%
% Haitian Creole	8.1%
% Portuguese	2.0%
% Somali	1.8%
% Vietnamese	6.3%
% Other languages	9.9%
English Language Proficiency[2]	
% MEPA Level 1	5.1%
% MEPA Level 2	13.6%
% MEPA Level 3	38.5%
% MEPA Level 4	42.8%
% Mobile[3]	6.1%
% SWD[4]	42.0%

Note: Red indicates those characteristics where there is over-representation relative to the overall LEP population; [1]Percent eligible for free or reduced price lunch; [2] The Massachusetts English Proficiency Assessment is a test of English language proficiency in reading, writing, listening, and speaking required of all LEP students in Massachusetts. In SY2006, it provided results in 4 levels of performance (see Chapter VI for a fuller discussion of MEPA); [3]Percent of students who changed schools between October and June of a given school year; [4] Percent designated as a student with disabilities (SWD). Includes only students ages 6+ in K-12.

almost recovered through new enrollments and changes in de-designation. But that year, the second decline took place when 2,536 LEP students in ELL programs were transferred into general education programs, causing ELL programs to, again, lose one-third of its students. In this change, general education programs grew while ELL programs declined.

Table 10 shows characteristics of the students making the transfer away from programs for ELLs between SY2006 and SY2007. This transfer accounted for 91.0% of the total decline in LEP students in ELL programs observed in that period; the rest was due to transfers, dropouts, and graduations. Of the 2,536 students who transferred, 54.6% were in Grade 3 or lower. The largest proportion of the students who transferred (42.8%) were at the higher levels of English proficiency (Level 4) although close to 20% were at MEPA Levels 1 and 2 (Table 10).[7] Of the LEP students transferred out of ELL programs in SY2007, 42% were students who were designated as LEP-SWDs. Of the latter, the majority (93.4%) were students who were previously designated LEP-SWD and were attending ELL programs. Relative to the characteristics of the overall enrollment of ELLs in BPS, these transferring students show over-representation of males, of Spanish and Vietnamese speakers, of students at the highest MEPA performance levels, and the proportion designated as SWDs.

IN DEPTH:

Enrollment of English Language Learners through Time

One of the most often mentioned consequences of the implementation of Chapter 386 has been the increase in the designation as disabled of a growing number of LEP students. This was documented in Boston (Tung et al., 2009) and in Massachusetts (English Language Learners Sub-Committee, 2009; Serpa, 2011), while at the same time concerns have been raised about under-identification of LEP students who require special education and the availability and quality of services for those already identified (English Language Learners Sub-Committee, 2009; Serpa, 2011). In addition to those concerns, the fact that 42% of the LEP students transferred from ELL programs in SY2006 were students in special education programs prompted our focus on the enrollment of LEP students with disabilities.

Table 11 shows the overall enrollment of LEP Students with Disabilities (LEP-SWD) and their enrollment in programs. The movement of LEP-SWDs out of the ELL programs in SY2006-SY2007 is evident, as the enrollment of LEP-SWD in ELL programs declined precipitously and those of LEP students not in ELL programs climbed at a similar pace. Between SY2006 and SY2007, the enrollment of LEP-SWDs in programs other than ELL programs increased by 668.1%!

Placement in SPED programs (Table 12) showed that LEP-SWD students in ELL programs functioned in full inclusion classrooms more frequently than all SWDs and most definitely, LEP-SWDs not enrolled in ELL programs. LEP-SWDs in ELL programs were most frequently enrolled in SEI Language Specific programs.

Special education programs provide needed resources for students who have undergone a rigorous assessment process. The high (and growing) incidence of placement of LEP students in programs for SWDs is a concern in Massachusetts because these are not programs specifically designed to support language development and therefore may further constrain the opportunities of LEP students to engage with challenging academic content. The practice of over-placement is often associated with problems in the assessment process, including using tests and assessment protocols designed for English speakers through a translator or directly in English by monolingual English speaking staff. In the case of some disabilities, direct communication and the use of language are intrinsic to the assessment process and to the quality of the communication between the student and the examiner. The data in Table 14 show that these more sensitive disabilities are precisely those that stand out among LEP-SWDs in Boston, raising concerns about both over-identification (in the case of intellectual and communication disabilities) and under-identification (in the case of emotional disabilities).

Aside from the issue of over- or under-classification described above, the lack of appropriate services is also a concern. This is usually due to the lack of professional staff with experience serving LEP-SWDs within SPED programs and a dearth of teaching resources appropriate for LEP-SWDs. An important barrier, often pointed out by practitioners, is the erroneous belief that "SPED trumps ELL," or the misconception that attending to students' special education needs supersedes the need to attend to the issues posed by lack of English proficiency (Serpa, 2011). As is pointed out by Serpa (2011) in her policy paper on services to LEP-SWDs in Massachusetts, students who have special educational needs and are LEP students are legally required to receive both SPED and ELL services.

For a brief view of demographics and academic outcomes for LEP students with disabilities see Appendix 3.

Table 11. Enrollment of Students of Limited English Proficiency with Disabilities (LEP-SWD), K-12. BPS, SY2006-SY2009

	SY2006	SY2007	SY2008	SY2009	% Change SY2006-SY2009
Total LEP/SWD[1]	1,966	2,022	2,013	2,052	4.4%
LEP-SWD in ELL program	1,791	722	741	708	-60.5%
%	91.1%	35.7%	36.8%	34.5%	-
LEP-SWD not in ELL program	175	1,300	1,272	1,344	668.1%
%	8.9%	64.3%	63.2%	65.5%	-

[1] Notes: Includes students ages 6+ in K-12.

Table 12. Placement of LEP-SWDs by Type of Special Education Program, K-12. BPS, SY2009

	ALL SWD[1]		ALL LEP-SWD[1]		LEP-SWD in ELL program		LEP-SWD[1] not in ELL Program	
SPED Placement	N	%	N	%	N	%	N	%
Full inclusion[2]	3,511	31.8%	593	28.9%	270	38.1%	323	24.0%
Partial inclusion[3]	2,547	23.1%	482	23.5%	202	28.5%	280	20.8%
Substantially separate[4]	4,478	40.6%	936	45.6%	236	33.3%	700	52.1%
Public separate day school	489	4.4%	41	2.0%	0	0%	41	3.1%

Note: [1]Includes only students ages 6+ in K-12; [2] 80% of time or more in general education (or ELL) classroom; [3]40-80% of time or more in general education (or ELL) classroom; [4] special education services outside the general education classroom more than 60% of the time.

Table 13. LEP-SWD Enrollment in Programs for English Language Learners, K-12. BPS, SY2009

	All LEPs		LEP-SWD	
	N	%	N	%
In ELL Programs[1]	6,612	100%[2]	708	100%[2]
SEI Language Specific	5,140	77.7%	598	84.4%
SEI Multilingual	694	10.4%	31	4.3%
Two-Way Bilingual	359	5.4%	61	8.6%
SIFE	272	4.1%	15	2.1%
TBE	147	2.2%	3	0.4%

Note: [1] Includes only students in K-12 in order to facilitate this analysis. [2] 100% here indicates the column total, *not* that 100% of students are enrolled in ELL programs.

Table 14. Nature of Primary Disability, K-12. BPS, SY2009

	MA LEP-SWDs[1]	BPS SWDs[2]	BPS EP-SWDs[2]	BPS LEP-SWDs[2]
Total	9,056	11,025	8,973	2,052
Autism	1.8%	3.3%	3.5%	2.6%
Communication	23.2%	15.5%	13.4% [3]	24.6%
Developmental Delay (through age 9 only)	11.5%	5.1%	5.1%	4.8%
Emotional	4.5%	12.6%	14.5% [3]	4.4%
Health	3.9%	1.1%	1.2%	0.5%
Intellectual	15.7%	13.0%	11.5% [3]	19.6%
Multiple Disabilities	1.5%	1.2%	0.9%	2.3%
Neurological	1.1%	0.4%	0.4%	-
Physical	0.8%	1.6%	1.6%	1.6%
Sensory/Deaf /blind	0.2%	0.2%	0.2%	-
Sensory/Hard of hearing or deaf	0.5%	1.3%	1.4%	0.9%
Sensory/Vision Impairment or Blind	0.2%	0.3%	0.3%	-
Specific Learning Disabilities	35.1%	44.5%	46.0% [3]	37.9%

Notes: Dashes indicate that n<10 students and is suppressed for reasons of confidentiality. [1] Source: English Language Learners Sub-Committee, 2009 p. 11. [2] Includes only students ages 6+ in K-12; [3] Differences in the prevalence of communication, emotional, intellectual and specific learning disabilities between LEP-SWD and non-LEP-SWD are statistically significant (p<.000 in all cases although effect sizes are small or minimal).

B What Are the Characteristics of English Language Learners Enrolled in Different Types of Programs?

The comparison between LEP students in different types of programs shows that there are significant differences in the demographic composition of the students enrolled. For example, among those not in ELL programs, the proportion of students with disabilities and students at the highest levels of English proficiency was the highest found among all the programs. SIFE programs stand out for their higher proportion of male students, of students who are mobile, and of students at the lower levels of English proficiency as well as the lower proportions of those who are of low income.[8] Similarly deserving of mention are the high proportions of low-income students among LEP students enrolled in Two-Way and transitional bilingual programs. SEI programs follow SIFE programs in their concentration of mobile students and those at low levels of English proficiency and also have relatively high proportions of poor students.

We examined the significance of the differences between the demographic compositions of the enrollment in ELL programs and that of students not in ELL programs and found that the differences in terms of gender, mobility, English proficiency and the proportion of students designated as disabled were all statistically significant. As a group, students in all ELL programs show a lower proportion of males, a higher proportion of mobile students, and a lower proportion of students who are designated as students with disabilities. While there is an even distribution across English proficiency levels among LEP students in ELL programs, students in the high levels of English proficiency are over-represented among students not in ELL programs, where 89% of the students are in Levels 3, 4, and 5.

Table 15. Characteristics of LEP Student Enrollment by Program, Pre-K to 12. BPS, SY2009

	All LEPs	Not in ELL Program[1]	In ELL Program[1]	ELL Program			
				SEI	Two-Way Bilingual	SIFE	TBE
Total Enrollment	11,690	4,718	6,972	6,142	419	272	147
Male	53.6%	54.7%	52.8%	52.9%	48.2%	58.5%	51.7%
Low Income	87.3%	87.4%	87.3%	87.0%	93.2%	80.9%	96.6%
Native Language							
Spanish	56.6%	52.1%	59.6%	59.0%	96.8%	49.3%	0%
Cape Verdean Creole	8.2%	5.6%	10.0%	10.7%	0.2%	14.7%	0%
Chinese languages	7.8%	6.7%	8.5%	7.3%	0%	0%	100%
Haitian Creole	9.0%	6.6%	10.6%	10.7%	0.2%	28.7%	0%
Portuguese	2.2%	2.5%	2.0%	2.3%	0%	0%	0%
Somali	2.1%	2.5%	1.8%	1.7%	0%	7.4%	0%
Vietnamese	6.1%	8.4%	4.5%	5.1%	0.2%	0%	0%
Other languages	8.1%	15.8%	2.9%	3.2%	2.4%	0%	0%
Mobile	12.9%	7.6%	16.4%	17.2%	3.6%	26.5%	0.7%[4]
SWD[2]	18.7%	30.9%	10.7%	10.8%	17.0%	5.5%	2.0%[4]
English Proficiency Level [3]	9,351	3,623	5,728	5,002	346	238	142
MEPA Levels 1&2	23.6%	11.0%	31.6%	30.6%	20.8%	76.9%	14.8%
MEPA Level 3	32.0%	30.4%	32.9%	33.9%	30.6%	17.2%	31.7%
MEPA Levels 4&5	44.4%	58.6%	35.5%	35.5%	48.6%	5.9%	53.5%

Notes: [1] The differences between LEP students in ELL programs and LEP students not in ELL programs are significant in regards to gender (p=.042, minimal effect size), the proportion of all language groups except Portuguese, the proportion of mobile students and proportion designated as SWD's (p<.000 with small effect size in all cases except in the case of the differences in the proportion of Somali students where p=.013, minimal effect size) and the proportions of students of different English proficiency levels, where p=.000, medium effect size); [2] Includes students ages 6+ in K-12; [3] Values are for MEPA test-takers only. This includes students in grades K-12. [4] Represents less than 10 students.

These findings are important because they show that the two set of students – those in ELL programs and those not in ELL programs – have very different characteristics, precisely in those characteristics that are associated in the literature with educational outcomes. High levels of English proficiency and lower proportions of mobile students are more prevalent among LEP students, likely contributing to their stronger academic outcomes, while the lower levels of students with disabilities favor ELL programs.

In Sum

Our review of the enrollment and demographics of LEP students in BPS programs shows that while the enrollment of students of limited English proficiency in Boston increased steadily between SY2006 and SY2009, the enrollment of LEP students in different programs suffered some dramatic changes. The most salient was the decline of 23.6% in the enrollment in programs for English language learners and a 267.7% increase in the enrollment of LEP students in educational settings which are not specifically designed for the instruction of ELLs (for example, general education classrooms and special education programs). This shift took place between SY2006 and SY2007, when 2,536 students were transferred from ELL programs to programs not designed for ELLs. Of these students, 54.5% were students in Grade 3 or lower and 42.8% were students at the higher levels of English proficiency (though 20% were at very low levels), and 42% were designated as students with disabilities.

This sudden transfer of a large number of students from one program to another signals an administrative policy decision and not a gradual program transition or the accumulation of individual parental

choices. From the data gathered, it is not clear whether it was a decision executed in SY2005 and reversed in SY2006 or if the increases and decreases obey another logic. What is clear is that enrollments in ELL programs in Boston declined after the implementation of Chapter 386 of the Acts of 2002 and that between SY2006 and SY2009, LEP student enrollments in programs other than ELL programs increased dramatically.

The review of the demographic differences in the population of students enrolled in different types of programs found that there are significant differences along key variables generally associated with academic outcomes: income, mobility, English proficiency level, and designation as a student with disabilities. For example, the high levels of English proficiency and lower proportions of mobile students found among programs not for ELLs favors them in terms of academic outcomes while the lower levels of students with disabilities favor ELL programs.

The comparison among the different ELL programs – Sheltered English Immersion, Two-Way Bilingual, programs for students with interrupted formal education (SIFE), and Transitional Bilingual Education – shows that SIFE programs stand out for their higher proportion of male students, of students who are mobile, and of students at the lower levels of English proficiency as well as the lower proportions of those who are of low income, while Two-Way Bilingual and TBE programs have high proportions of low-income students.

These differences between the students enrolled in the different types of programs need to be kept in mind as we review the outcomes of students in these programs.

[1] Although both students who speak English fluently and students of limited English proficiency (LEP students who are native Spanish speakers) are enrolled in Two-Way Bilingual Programs in BPS, in this study, we are only reporting on the enrollment and outcomes of LEP students in these programs. In addition, although the Sarah Greenwood K-8 School is coded in our database as implementing a Two-Way Bilingual Program, research conducted for the companion report to this study, Learning from Consistently High Performing and Improving Schools for English Language Learners in Boston Public Schools, revealed that during the study period the program implemented in grades K-2 met the criteria for a Two-Way Bilingual program but the instructional model used in grades 3-5 more closely resembled that of an SEI language specific program, In consultation with staff from OELL, we have not changed the SIMS program designation of the Sarah Greenwood School and are including its students in our analysis as enrolled in a Two-Way Bilingual Program, no matter their grade. ,

[2] Because SIMS does not collect data on SIFE programs, we are only able to report on SIFE enrollment for SY2009, the year for which the research entered this data by hand using OELL data.

[3] In this study we analyze demographics and outcomes of LEP students not in ELL programs in the aggregate.

[4] In fact, it is this requirement that allows districts to develop an array of programs to meet the diverse needs of students requiring language support. The law permits districts to develop alternatives to SEI in schools where more than 20 children of one language other than English per grade are enrolled and have had their waivers to SEI approved by the district.

[5] In this regard, it is important to note that in SY2009, of those students who opted out and are in general education, 62% are enrolled in a school with an ELL program.

[6] Between SY2005 and SY2006, Tung et al. show a smaller increase in enrollment in ELL programs (to 8,614 students) and a slightly steeper decline in enrollments not in ELL programs (to 1,112 students).

[7] In SY2003, only students at the higher levels of English proficiency were transferred to general education (Boston Public Schools, 2006).

[8] The low proportion of SIFE students found to be of low income may be due to the construct of the variable ("eligible for free/reduced priced lunch") and the specific characteristics of the population (most SIFE students are in high school) and the common finding that high school students show lower rates of use of free/reduced lunch (R. Rice, META, Inc., personal communication).

CHAPTER

VI.

ENGLISH LANGUAGE ACQUISITION

Becoming fully literate in English, and more specifically, learning academic English at a level of proficiency that allows for successful academic experience in American schools is a critical challenge for English language learners and for the teachers, programs and schools that educate them. The task is as complex as the population of English language learners is diverse in its experience. In Boston, many ELLs are first generation immigrants but in all likelihood the majority are not, because of the vast representation of Puerto Ricans and of U.S. born ELLs who are children of recent immigrants.[1] As shown earlier, Boston's ELLs speak over 50 languages, although the majority are Spanish speakers. Many immigrant ELLs arrive from their country of origin at different ages and, in some cases, with strong academic preparation and solid literacy skills in their own language while, in others, newcomers have experienced interrupted or little formal education and arrive in Boston with very weak literacy in their native language. Some U.S. born ELLs may not be literate either in their own language or in English. Language-related differences are not the only ones that characterize the population of ELLs. They differ in race, in class background and current economic status, in their experience of racism in the U.S., in their immigrant status, in the age at which they arrived in the U.S. They may come with traumatic experiences in the transition from countries of origin at war or undergo serious economic disruptions in their settlement in Boston.

The process of acquiring academic language proficiency –which is required for ELLs to be at a level of English language development akin to that of English proficient students – is also highly complex. Although there has been substantial attention to the characteristics and implementation of programs for English language learners, in many cases the process of acquiring a second language is not well understood; even when understood, it is not completely accepted. A case in point is the role of a child's first language (L1) in the acquisition of a second one (L2). Researchers have described the linkages between oral capacity and literacy in the native tongue, the acquisition of oral language ability in a second language, and impact of both on the development of effective academic language proficiency (Cummins, 2000; Riches & Genesee, 2006; Saunders & O'Brien, 2006). They have concluded that a strong base of oral language development in L1 facilitates acquisition of L2 oral language and literacy and that both contribute to the development of academic language.[2] In turn, the development of academic language proficiency facilitates the access to academic content in English Language Arts, math, science, humanities, etc. (Collier, 1987; Genesee, Lindholm-Leary, Saunders, & Christian, 2006; Thomas & Collier, 1997, among many others).

Of great concern for educational policy and practice is the length of time that students need in order to successfully make the transition from no or low proficiency in English to a level of proficiency that permits access to academic content that is comparable to that of English proficient students. Thomas and Collier (1997), in one of the largest and most comprehensive studies on this theme, found that age at arrival, native language proficiency, and type of schooling in the U.S. influenced the time required for students to attain academic English proficiency. For example, they report that students who immigrated at age 8-11 acquired English more expediently than other groups. Older students with good native language literacy and academic language also did well, but those who arrived without a good base in their own language did not have good outcomes. Specifically, Thomas and Collier write that:

- it takes a typical bilingually schooled student who is achieving at grade level in L1 about 4-7 years to make it to grade level in L2.
- it takes typical "advantaged" immigrants (those with 2-5 years of on-grade-level home country schooling in L1) from 5-7 years to reach grade level in L2,when schooled all in L2 in the U.S.
- it takes the typical young immigrant schooled only in L2 in the U.S. 7-10 years or more to reach the grade level. The majority of these students do not ever make it to grade level without support for L1 academic and cognitive development.

These findings held true regardless of the home language, country of origin, or socioeconomic status. Similarly, Hakuta, Butler, and Witt (2000), in a study of two California districts considered successful in teaching English to ELLs, found that it takes three to five years to develop oral proficiency and four to seven years to acquire academic English proficiency. A similar time frame was reported by Cummins (2000), Pray and MacSwan (2002), and Suarez-Orozco, Suarez-Orozco, and Todorova (2008).

Students in all-English instruction do not begin to show higher intermediate levels of English profi-

ciency for at least four years – i.e., immersion in all-English instruction does not significantly accelerate English acquisition (Goldenberg, 2008). Evaluations of SEI implementation in California confirm that it takes at least five years to attain English proficiency. Parrish et al. (2006) in their evaluation of California's SEI programs estimated that the probability of an English learner being re-designated as English proficient in less than ten years was lower than 40%.

Although the process of acquiring proficiency in a second language is well known and documented, in many cases, educational policy does not reflect this knowledge. For example, current Massachusetts law stipulates that LEP students be taught only in English, favoring Multilingual SEI classrooms where the students' native language is not to be used. Initially, the expectation was that LEP students would remain in these types of programs for one year before transitioning into general education. Although this was never a requirement, that expectation still drives the thinking of the public and of many educators as well. Given the demographics of Boston's ELL population and the restrictive language policies of the state, most are the "typical young immigrant student schooled all in L2" (English). Thus, Boston's ELLs may be at the most disadvantageous situation described by Thomas and Collier in terms of the acquisition of academic English proficiency.

Massachusetts requires that the English proficiency of LEP students in reading, writing, listening, and speaking as well as the progress they are making in learning English be measured yearly.[3] The state provides the Massachusetts English Proficiency Assessment (MEPA) for this purpose. The test consists of two parts: the MEPA R/W, a written test measuring reading and writing knowledge and skills and the Massachusetts English Language Assessment-Oral (MELA-O), an observational assessment which assesses proficiency in listening (comprehension) and speaking (production). LEP students in all grades (K-12) began to take the MEPA R/W and MELA-O in SY2009. But during three years covered by this study (SY2006, 2007 and 2008), only students in Grades 3-12 were tested. Testing results were reported in three ways: as an overall scaled score from 300 to 400 in SY2006-SY2008 and 400 to 550 in SY2009; as scores for each Reading, Writing, Listening, and Speaking area; and as performance levels. Between SY2006 and SY2008, there were four MEPA performance levels; this was changed to five performance levels in SY2009. At MEPA Level 1, a student has not yet developed simple written and spoken communication in English. At MEPA Level 2, a student has developed simple written and spoken communication in English but errors often interfere with basic comprehension and communication although overall meaning may be retained. At MEPA Level 3, a student can communicate in English and use the language in a school context but where errors still impede communication and comprehension even though overall meaning is usually retained. At MEPA Level 4, a student is nearly fluent in English and uses the language in the school context with few errors. Finally, at MEPA Level 5, a student has effective communication in English with few errors (MDESE, 2009a, pp. 20-24). In most cases, we report MEPA performance levels for SY2009 using the five categories; but in reporting trends through time or when we need to draw the MEPA results from SY2008 (for example in the dropout analyses) we use the four performance categories.

In the analysis of English language acquisition in this chapter, we focus squarely on English language learners and report on the English proficiency of the overall population of LEP students and of ELLs in different types of programs. We explore also the correlation between MEPA English proficiency level and performance in the Massachusetts Comprehensive Assessment System's (MCAS) standardized achievement tests in English Language Arts. Finally we examine the trajectory of English language acquisition of three cohorts of students – third, sixth, and ninth graders – and observe the progress in MEPA performance made over three years.

Populations focused upon in this and subsequent chapters:

Total	All BPS				
Native Language	Native English Speaker (NES)		Native Speakers of Other Languages (NSOL)		
Language Proficiency	English Proficient (EP)			**Limited English Proficiency (LEP)**	
	NES		NSOL-EP	FLEP	
Program Participation	Not in ELL Program			Not in ELL Prog	In ELL Prog

A How Are English Proficiency Levels Distributed Across English Language Learners?

In SY2009, LEP students in Boston scored in the middle levels of proficiency, Levels3 and 4 (61.7%). The highest proportion of LEP students (32.0%) scored at MEPA performance Level 3 in SY2009. Researchers point out that the trajectory through the low levels of English proficiency is usually quick and that the movement through the middle levels tends to be the most time-consuming (Thomas &Collier, 1997). The trend over the study period was for the proportion of students at the higher MEPA levels to increase (Appendix 2). Comparing across grade levels shows that high schools had the highest proportion of students at MEPA performance Level 3.

B What Are the Characteristics of English Language Learners at Different English Proficiency Levels?[4]

LEP students at MEPA Levels 1 and 2 have a higher proportion of males and of mobile students than LEP students performing at MEPA Levels 3 to 5. In this group the proportion of mobile students was more than three times that of students at Level 3 and more than seven times that of those at Levels 4 and 5. Among LEP students scoring at Level 3, the most salient characteristic is the high proportion who has been determined to be students with disabilities (22.4%). Among students at Levels 4 and 5, the most salient characteristics are their low mobility (3.8% changed schools in SY2009) and the higher representation of girls in their numbers. In terms of the English proficiency of students of different native language groups, the representation

Figure 4. Distribution of MEPA Test-Takers across English Proficiency Levels, K-12. BPS, SY2009

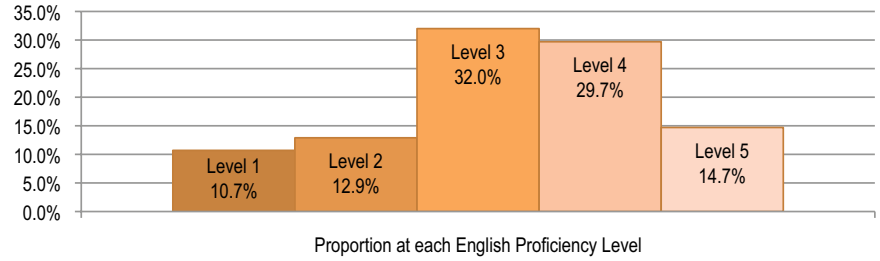


Table 16. Language Proficiency Levels of MEPA Test-Takers. BPS, SY2009

	Total MEPA Test-takers	Percent Scoring at MEPA Levels:				
		1	2	3	4	5
All	9,531	10.7%	12.9%	32.0%	29.7%	14.7%
Elem (K-5)	5,599	10.9%	12.4%	29.1%	33.5%	14.1%
MS (6-8)	1,694	10.3%	13.6%	31.2%	29.0%	15.9%
HS (9-12)	2,058	10.2%	13.8%	40.4%	20.2%	15.4%

Table 17. Selected Characteristics of MEPA Test-Takers at Different English Proficiency Levels, K-12. BPS, SY2009

	All MEPA Test-takers	MEPA Levels 1 & 2	MEPA Level 3	MEPA Levels 4 & 5
N of Test-takers	9,351	2,206	2,990	4,155
Gender (% Male)	53.2%	56.9%	54.6%	50.2%
Low Income	90.2%	89.3%	90.1%	90.9%
Native Language				
Spanish	56.6%	57.6%	56.2%	56.4%
Cape Verdean Creole	8.4%	12.0%	9.1%	6.0%
Chinese languages	8.1%	6.6%	6.2%	10.2%
Haitian Creole	9.0%	9.6%	10.1%	7.8%
Portuguese	2.0%	1.3%	2.0%	2.5%
Somali	2.1%	1.9%	2.3%	2.0%
Vietnamese	5.9%	4.8%	6.4%	6.2%
Other languages	7.9%	6.3%	7.8%	8.9%
Mobility	9.9%	24.4%	7.7%	3.8%
SWD[1]	17.0%	16.3%	22.4%	13.5%
Note: [1] Includes only students 6+ in grades K-12.				

of Spanish speakers across all proficiency levels is comparable with their presence among all test-takers. Among Cape Verdean and Haitian Creole speakers, students at Levels 1, 2, and 3 are over-represented, indicating a high proportion of newly immigrated students. Among all other groups, the tendency is for students at the higher levels of MEPA performance to be over-represented in relation to their numbers among test-takers.

C What Are the English Proficiency Levels of English Language Learners in Different BPS Programs?

One of the most salient differences between students in ELL programs and those not in ELL programs is the distribution of students at different levels of English proficiency in the groups. Among students in ELL programs, English proficiency levels are evenly distributed and range from a high of 35.5% of students scoring at MEPA Levels 4 and 5 to a low of 31.6% of students scoring at Levels 1 and 2. This pattern is similar for students at all grade levels. In contrast, the distribution of English proficiency levels across students not in ELL programs is skewed toward the highest levels of English proficiency: 58.6% of LEP students scored at MEPA Levels 4 and 5 while only 11.0% scored at MEPA Levels 1 and 2.Middle school students show the most extreme preponderance of students at the higher English proficiency levels. Because English proficiency is the single most important factor in academic achievement for LEP students, the preponderance of students at the higher English proficiency levels should result in higher outcomes, as we will see in subsequent chapters. Among those in ELL programs, Two-Way bilingual and TBE programs showed a high proportion of students at the upper levels of English proficiency in SY2009. The opposite was true among the SIFE students. SEI students were evenly distributed among the different MEPA performance levels. (Information on SEI and SIFE programs disaggregated by language group appears in Appendix 2).

Table 18. English Proficiency Levels of MEPA Test-Takers by Grade Level and Program, K-12. BPS, SY2009

	N MEPA Test-Takers	MEPA Levels 1 & 2	MEPA Level 3	MEPA Levels 4 & 5
All MEPA Test-takers	9,351	23.6%	32.0%	44.4%
In ELL Programs	5,728	31.6%	32.9%	35.5%
Elementary School	3,130	31.6%	29.7%	38.7%
Middle School	953	37.8%	32.4%	29.8%
High School	1,645	28.0%	39.3%	32.6%
Not in ELL Programs	3,623	11.0%	30.4%	58.6%
Elementary School	2,469	12.9%	28.4%	58.8%
Middle School	741	6.1%	29.6%	64.4%
High School	413	8.2%	44.6%	47.2%

Table 19. English Proficiency Levels of MEPA Test-Takers in ELL Programs, K-12. BPS, SY2009

	N MEPA Test-Takers	MEPA Levels 1 & 2	MEPA Level 3	MEPA Levels 4 & 5
All LEPs	9,351	23.6%	32.0%	44.4%
Not in ELL Program	3,623	11.0%	30.4%	58.6%
In ELL Programs	5,728	31.6%	32.9%	35.5%
In SEI	5,002	30.6%	33.9%	35.5%
SEI Multilingual	560	31.1%	36.3%	32.7%
SEI Language Specific	4,442	30.6%	33.6%	35.8%
In Two-Way Bilingual	346	20.8%	30.6%	48.6%
In TBE	142	14.8%	31.7%	53.5%
In SFE	238	76.9%	17.2%	5.9%
SIFE Multilingual	13	38.5%	46.2%	15.4%
SIFE Language Specific	225	79.1%	15.6%	5.3%

D Which MEPA English Proficiency Levels Are Most Frequently Represented Among Those Who Pass MCAS ELA? What Proportion of English Language Learners Reach This Level?

Although federal and state laws require that LEP students' scores in standardized testing be reported in the aggregate, this practice obscures our understanding of the true academic achievement of ELLs. First of all, it creates the misconception that all LEP students should achieve at the same level, without regard to their English proficiency, even when all logic suggests that those at the lowest levels of English proficiency (MEPA Levels 1–3), should not be expected to perform well on the MCAS or any other standardized tests developed for English proficient students. In contrast, students at the higher levels of English proficiency should be achieving at rates more comparable to those of English proficient students but it is also impossible to assess this when ELL scores are observed only in the aggregate. Finally, aggregated reporting of ELL test scores results in faulty comparisons across time as well as across schools, districts and states because it treats all ELLs as if they had the same distribution of English proficiency levels at all times and across all settings.

Table 20 shows the MCAS ELA pass rates of LEP students at different levels of English proficiency.[5] The comparison shows that the command of English required to pass standardized tests designed for English proficient students, such as the MCAS, far exceeds the levels of English proficiency represented by MEPA Levels 1–3 and to some extent 4.[6] Pass rates among elementary school students, for example, range from a low 0% among those in MEPA Level 1 to 95.3% among LEP students at MEPA Level 5. At Level 5, LEP elementary school students surpass the pass rates of English proficient students but at Level 4 there is close to a 10-point gap between LEP and EP students. Middle school and high school LEP students scoring at MEPA Level 5 also surpass the pass rates of English proficiency students at those levels and the gaps between those scoring at MEPA Level 4 are much narrower.

Table 20. MCAS ELA Pass Rates of LEP Students at Different Levels of English Proficiency. BPS, SY2009

	N of MEPA / MCAS Test-takers	MCAS ELA Pass Rate
Elementary School[1]		
All LEP MEPA & MCAS Test-takers	1,394	64.8%
MEPA Level 1	20	0%
MEPA Level 2	77	15.6%
MEPA Level 3	311	31.2%
MEPA Level 4	707	74.8%
MEPA Level 5	279	95.3%
English Proficient	NA	84.0%[2]
Middle School [2]		
All LEP MEPA & MCAS Test-takers	1,453	59.2%
MEPA Level 1	58	1.7%[4]
MEPA Level 2	161	12.4%
MEPA Level 3	483	41.4%
MEPA Level 4	485	80.6%
MEPA Level 5	266	93.2%
English Proficient	NA	90.3%
High School [3]		
All LEP MEPA & MCAS Test-takers	455	62.6%
MEPA Level 1	12	25.0%[4]
MEPA Level 2	44	50.0%
MEPA Level 3	201	61.2%
MEPA Level 4	121	92.6%
MEPA Level 5	77	98.7%
English Proficient	NA	95.2%

Notes: [1] Includes grades 4 and 5 only. [2] Includes grades 6, 7 and 8. [3] Includes grade 10 test-takers only.
[4] Represents less than 10 students.

IN DEPTH:

A Look at the English Acquisition Trajectories of English Language Learners at Different Grade Levels

The critical issue to assess is the proportion of LEP students who attain MEPA performance Level 5, that is, the level of English proficiency that most closely reflects the attainment of academic English (and therefore provides LEP students with the best possibility of passing MCAS ELA). Also important is to estimate how long it is taking Boston ELLs to attain that level of English proficiency. This is important to Boston ELLs in general but, most particularly, LEP students in high school because Massachusetts is a "high-stakes" testing state that requires that high school students pass MCAS ELA, Math and Science in order to graduate from high school.

To examine these question, we assessed the language acquisition trajectories of three cohorts of students in Grades 3, 6, and 9 who scored at MEPA performance Level 1 in SY2006 and observed their MEPA test performances in SY2007, SY2008 and finally, in SY2009.This analysis of MEPA scores through time allowed us to see the difference in the trajectories of students at different grade levels as well as the progress that students can make in three years (the limit of the data available in this study[7]).We then assessed the proportion of students at each level

who attained the level of English proficiency required to score at MEPA performance Levels 4 and 5 or to be de-designated as a student of limited English proficiency (or "FLEPed"). In the case of high school students, additional indicators are graduation from high school with competency determination or having completed Grade 12 in a district approved program.

The Trajectory of the Grade 3 Cohort. Of the 131 LEP students who scored at Level 1 in Grade 3 in SY2006, 9.2% had reached Level 5 and 26.7% had reached Level 4 by SY2009, that is, in three years about 36% of the LEP students had reached levels of English proficiency that brought them close to the possibility of a performance on the MCAS that is closer to that of English proficient students. Nevertheless, almost 5% remained at Level 1 after four years.[8]

Of the 131 students included in this cohort, 32.1% (42 students) did not take the MEPA test in 2009 for several reasons. Most of those not tested had transferred out of the district to schools systems in the state or out-of-state, accounting for 23.7% of the cohort. Five students (3.7% of the cohort) had been determined to have dropped out by the time they reached Grade 6 and 4.6% had not been tested although they were enrolled in BPS.

Figure 5. SY2009 MEPA Outcomes of a Grade 3 Cohort of 131 Students Scoring at MEPA Level 1 in SY2006.

L5	L4	L3	L2	L1	Not Tested (32.1%)		
9.2%	26.7%	22.9%	4.6%	4.6%	4.6% Enrolled, not tested	23.7% Transferred	3.7% Dropped out

The Trajectory of the Grade 6 Cohort. Of the 93 LEP students who scored at Level 1 in Grade 6 in SY2006, none reached Level 5 by SY2009 but 4.8% of the students in the cohort had been de-designated as LEP students and become FLEPs. After three years, 6.5% remained at Level 1.[9]

Close to one-third of the 93 students who composed the cohort in SY2006 were not tested in SY2009 for several reasons. Just over 3% of these middle school students dropped out by the time they reached Grade 9 in SY2009.Also not tested in BPS were the 14.3% of the cohort who transferred and the 9.8% who were enrolled in BPS but were not tested for reasons that are unknown.

Figure 6. SY2009 MEPA Outcomes of a Grade 6 Cohort of 93 Students Scoring at MEPA Level 1 in SY2006.

L4	L3	L2	L1	Not Tested (32.3%)			
7.5%	41.9%	11.8%	6.5%	4.8% FLEPed	14.3% Transferred	9.8% Enrolled, not tested	3.4% Dropped out

The Trajectory of the Grade 9 Cohort. Of the 328 LEP students who scored at Level 1 in Grade 9 in SY2006, 5.2% attained Level 5, 9.1% had attained Level 4, 1.2% had been de-designated as students of limited English proficiency (and become FLEPs) and 3.0% had graduated from high school with competency determination or completed Grade 12 in a district approved program (which assumes that they had passed the MCAS ELA exam). An additional 2.1% were still testing at Level 1 of MEPA.[10]

The most salient issue in the high school trajectory is the high proportion of ninth graders who had dropped out of high school by SY2009. Seventy-six students out of the cohort of

328 dropped out by SY2009, amounting to a dropout rate of 23.2% for the Grade 9 cohort. Of those who dropped out 9.1% left school due to employment, 1.3% had been incarcerated, 1.3% had entered the military, 2.6% had entered the Job Corps and 6.5% left for non-diploma-granting adult education programs. The remaining 76.7% were students whose plans or location were unknown.

Akin to the dropouts are those students who "age-out" of high school without graduating, that is, those students who reach 21-22 years of age and are forced to leave the schools without a diploma. These students amounted to 4.6% of the cohort.

Figure 7. SY2009 MEPA Outcomes of a Grade 9 Cohort of 328 Students Scoring at MEPA Level 1 in SY2006.

L5	L4	L3	L2	L1	Not Tested (63.7%)					
5.2 %	9.1%	16.8%	3.0 %	2.1 %	1.2% FLEPed	25.3% Transfers	3.0% Graduated	4.6% Aged out, did not graduate	6.4% Enrolled ,not tested	23.2% Dropped out

In comparing the trajectories of students at different grade levels, we look at the proportion of students who attained MEPA Level 4 or 5, were FLEPed or, in the case of high school students, had graduated from the Boston Public Schools. This brief look at the trajectories of students at different grade levels shows that elementary students were the most advantaged since 25.7% progressed from MEPA Level 1 to Level 4 or 5 in the four years, with the assumption that this level of performance reflected the attainment of academic English proficiency. Among middle school students only 12.3% had reached that high bar. Among high school students, 18.5% had been "FLEPed," had attained a MEPA performance level of 4 or 5 or had graduated.

The three-year trajectories show that their experience is similar to that reflected in the research. It underscores that language acquisition takes time, a lot more time than most people without knowledge of the dynamics of second language acquisition predict. There is no evidence in prior research or in the data analyzed in this study that children who are English learners can be "educated through Sheltered English Immersion during a temporary transition period not normally intended to exceed one school year" (Chapter 386 of the Acts of 2002, p. 3). In addition, this analysis showed that the percentage of students who dropped out of school was substantial at every grade level: 23.2% of the Grade 9 cohort had dropped out by SY2009 as had 3.4% of the middle school cohort. Most disturbing was that 3.7% of the Grade 3 cohort had abandoned schooling by the time they reached Grade 6.

In Sum

Previous chapters have highlighted the importance of the English proficiency of LEP students in their distribution across programs and schools. In this one, after the presentation of the demographic characteristics and program participation of students at different levels of English proficiency, we focused on the result of two analyses: an assessment of the level of proficiency required of students in order to pass the MCAS and the assessment of the progression through MEPA performance levels of 3 cohorts of LEP students. In regard to the characteristics of the students at different levels of proficiency, we found:

- In SY2009, the majority of LEP students in Boston scored in the middle levels of proficiency, Levels 3 and 4 (61.7%) on MEPA.
- Males and mobile students were over-represent-

ed among those LEP students scoring at Levels 1 and 2 of MEPA in SY2009 when compared to the proportion among all MEPA test-takers.

- Among Level 3 students, the most salient characteristic is the high proportion of students who are classified as disabled (22.4%) compared to 17.0% among all test-takers in SY2009.
- Among students at Levels 4 and 5, the most salient characteristics are their stability (only 3.8% changed schools in SY2009 compared to 9.9% among all test-takers) and the higher representation of girls in their numbers (49.8% compared to 46.8% among all test-takers.

The high mobility among students at the early proficiency levels could be indicative of a recent settlement by these immigrant students but the absence of data on time in the U.S. does not allow for this analysis. The difference in the gender composition of the students at the opposite levels of proficiency is also remarkable and could indicate a more rapid progression through the MEPA performance levels on the part of females. These are both elements for future study.

Other findings include:

- Assessing the level of English proficiency required to pass MCAS ELA (an indicator of the attainment of academic English), we found that among elementary and middle school students only those at MEPA Level 5 obtained pass rates in ELA comparable to those of English proficient students. Among high school LEP students, those scoring at both Levels 4 and 5 of MEPA had pass rates comparable to those of their English proficiency peers.
- There are significant differences in the distribution of English proficiency levels among students in different programs. The distribution among students not in ELL programs is skewed toward the highest levels of English proficiency: 58.6% of LEP students scored at MEPA Levels 4 and 5 while only 11.0% scored at MEPA Levels 1 and 2. This is the case across all grade levels. Among students in ELL programs, English proficiency levels are evenly distributed. This too is the case across all grade levels.
- Trajectories of language acquisition among third, sixth and ninth grade cohorts formed in SY2006 from students testing at MEPA Level 1 shows that the most successful trajectory took place among elementary school students, with close to 25% reaching MEPA Levels 4 or 5 in three years. High school students were the second most advantaged group with 18.5% having been "FLEPed," having attained a MEPA performance level of 4 or 5, or having graduated. The trajectories of the Boston cohorts are similar to those reflected in the research and confirm that language acquisition takes significantly more than three years for most students.

[1] SIMS collects very limited information on immigrants, using a narrow definition, for the purposes of determining students' eligibility for the federal Emergency Immigrant Education Program. Immigrants are defined as: a student who was not born in any U.S. state (including Puerto Rico as a state) and who must not have completed three full academic years of school in any state. Thus, because of this narrow definition of immigrants, we have not disaggregated LEP students by immigrant status nor are we able to report on immigrant generation number, Puerto Rican students, time in the U.S., etc. because these elements are not collected for SIMS.

[2] See evidence summarized in various chapters in Genesee, Lindholm-Leary, Saunders, & Christian (2006).

[3] See MDESE, Massachusetts English Proficiency Assessment (http://www.doe.mass.edu/mcas/mepa/) Accessed 5/21/2011. Appendix 2 presents the proportion of LEP students in grades 3-12 who took the MEPA test in SY2006 to SY2009 and shows that the overall compliance with MEPA testing has improved in these four years, increasing from 81.1% to 85.1%. In SY2009, 86.9% of LEP students in programs for ELLs and 82.1% of those not in ELL programs took the MEPA test

[4] MEPA performance levels in this and subsequent sections are aggregated into MEPA levels 1&2, 3, and 4&5 at the request of BPS's Office of English Language Learners.

[5] A full description of MCAS testing for LEP students appears in Chapter VIII.

[6] The performance of LEP students on MCAS will be discussed in greater detail in Chapter VII.

[7] Data are only available for four school years in the dataset used in this study. Therefore, we are unable to account for students' MEPA performance prior to SY06 in our trajectory analysis.

[8] Of the students who remained at level 1, 75% were students designated as having a disability

[9] Of these, 51.8% were students identified as students with disabilities.

[10] Of these students, 17.8% were determined to be students with disabilities.

CHAPTER

VII.

DROPPING OUT

High dropout rates among Boston Public School students have been of concern for some time, and in 2004 Boston was ranked among the 35 U.S. cities with the highest dropout rates (Balfanz & Letgers, 2004), signaling a public recognition of the crisis. In the last decade, significant attention has been placed on maintaining students in schools and even recovering those who have dropped out.

Several subsequent research and policy studies focused on the dropout rate and the dropouts. For example, a report by the Boston Youth Transitions Task Force (2006) documented that over a third of BPS high school students drop out of school and that among those who drop out there is an over-representation of youth of color, of males, of students facing major life situations, and of students experiencing great challenges in school (for example, being an English learner, failing the MCAS, and being retained in grade). The Parthenon Group (2007), in a study commissioned by the district, reported that one of the groups most susceptible to dropping out were "late-entrant ELLs," defined as English language learners who entered BPS for the first time during high school (p. 9). Others considered at high risk were special education students, those who entered high school over-age, those with low performance in middle school courses and MCAS tests, and students with very low attendance rates (less than 80%).

In 2009, the Gastón Institute and the Center for Collaborative Education focused on the dropout rates of English language learners as part of their study of enrollment and educational outcomes of ELLs in Boston Public Schools following the implementation of the educational policy changes required by Referendum Question 2. They found that the annual high school dropout rate had doubled (from 6.3% to 12.0%) in the first three years after the implementation of the policy change (Tung et al., 2009). Before the implementation of the law, the dropout rate of students in ELL programs was lower than those of English proficient students in general education programs; this was reversed after the implementation. Among some language groups –Haitian Creole speakers, for example– the dropout rate had tripled in that period (Uriarte et al., 2009).

Researchers have focused on the factors that lead students to drop out of school. Berkold, Geis, and Kaufman (1998, as quoted in Rumberger, 2006) used dropouts' answers in the National Education Longitudinal Study and reported that 77% mentioned school-related reasons, 34% mentioned family-related reasons, and 32% mentioned work-related reasons. Rumberger (2006) focused his review of the dropout research on the individual and institutional factors that have been associated with dropping out. Among the individual factors considered are poor academic achievement, poor engagement (indicated by low levels of attendance and high suspensions, for example), residential and school mobility, retention in grade, pregnancy, and employment. Student background characteristics such as gender (male), race (of color), and language proficiency are also part of the individual factors that affect dropping out (Rumberger, 2006; Swanson et al., 2006). Among the institutional factors considered are family factors (such as parental education and income, family structure, parental involvement in schooling) and school factors (student composition, school resources, policies that lead to involuntary and voluntary withdrawals from school, and high-stakes testing regimes) (Jacob, 2001; National Research Council, 1999; Rumberger,1995, 2006; Rumberger & Palardy, 2005; Rumberger & Thomas, 2000).[1]

In this chapter, after an assessment of the dropout rates of LEP students in Boston, we examine the annual dropout rate of LEP students of different characteristics and of those participating in different types of programs. Finally, we assess the relationship between key indicators such as attendance, suspensions, and retention on the dropout rate of LEP students in Boston. Other tables related to these topics appear in Appendix 2.

A What Are the Annual High School Dropout Rates of English Language Learners? How Do Their Rates Compare to Those of English Proficient Students? How Have the Annual High School Dropout Rates of LEP Students Changed through Time?

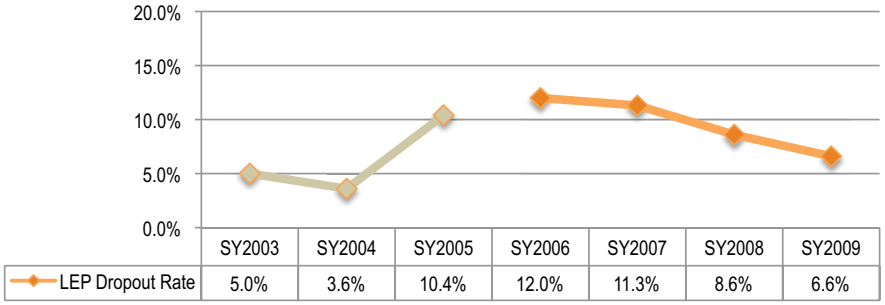
In this section we begin to analyze annual high school dropout rates among ELLs in Boston Public Schools by comparing their rates to those of English proficient students and examine the trend in the high school dropout rates for LEP students in Boston. Table 21 presents the SY2009 annual

dropout rate for all BPS students and for LEP and EP students and shows that the annual high school dropout rate is lower among LEP students than among English proficient students.[2] Trends in the dropout rate of ELLs between SY2006 and SY2009 show that the dropout rate of LEP high school students has decreased from 12.0% to 6.6%. This was a reversal of the steep climb of the rates in the previous years, as reported by Tung et al. (2009). Nevertheless, the dropout rate among high school LEP students has not declined to the level documented for the year prior to the implementation of Chapter 386.

Table 21. Annual High School Dropout Rates. LEP and EP Students. BPS, SY2009

	All BPS	ENGLISH PROFICIENT	LEP
Annual High School Dropout Rate[1]	6.9%	7.0%	6.6%
Note: [1] The difference in the dropout rate between LEP and EP students is not statistically significant.			

Figure 8. Trend in Annual High School Dropout Rate. LEP Students. BPS, SY2003-2009



Note: Source for SY2003-2005 data is Tung et al, 2009.

IN DEPTH:

Summer Dropouts

In following the MDESE (2010) dropout methodology of including summer dropouts in the annual dropout rate, an important finding emerged. Among LEP high school dropouts in SY2009, 39.8% dropped out during the summer prior to the start of the school year. An additional 8.0% of LEP students dropped out of high school in SY2009 with only 1 day of attendance and 1 day of membership. In other words, a little less than half of all LEP students who dropped out in SY2009 did so during the summer or, effectively, without having attended school that year.

B What Is the Annual High School Dropout Rate of LEP Students with Different Characteristics?

In this section we focus on the dropout rate of LEP and EP students of different demographic and other characteristics including grade level, gender, income status, native language, mobility, designation as a student with disabilities, and students' English proficiency level as measured by MEPA.

Grade. In SY2009, 201 LEP high school students dropped out of school, constituting a dropout rate of 6.6%. High school dropouts accounted for the majority of the LEP students who dropped out that year (Table 22). The highest proportion of LEP student dropouts left school in the ninth grade (30.8%). Nonetheless, the highest dropout rate is found among LEP students in the last high school grades – a full 53.2% of all SY2009 dropouts left school in Grade 11 or 12, for a dropout rate of 7.0%.

Table 22. Grade at Time of Dropping Out[1]. LEP and EP Students. BPS, SY2009.

	EP			LEP		
	N	% of Dropouts	Dropout Rate	N	% of Dropouts	Dropout Rate
All High School	1,225	100%	7.0%	201	100%	6.6%
Early High School[2]	583	47.6%	7.2%	94	46.8%	7.0%
9th grade	367	30.0%	7.1%	62	30.8%	6.2%
10th grade	275	22.4%	6.5%	45	22.4%	6.4%
Late High School[2]	642	52.4%	6.9%	107	53.2%	6.3%
11th grade	315	25.7%	8.0%	45	22.4%	6.7%
12th grade	268	21.9%	6.4%	49	24.4%	7.3%

Note: [1] Summer dropouts are assigned to the grade they were supposed to enter, per MDESE (2010) methodology. [2] The difference in dropout rates among LEP students in early high school grades and LEP students in late high school grades is not statistically significant.

IN DEPTH:

Middle School Dropouts

An analysis of the grade at the time of dropping out revealed that 286 students in middle school grades in SY2009 were coded in SIMS as dropouts: 236 EP students, representing a dropout rate of 2.2%, and 50 LEP students, representing a dropout rate of 2.4%. All of these students were labeled as "dropout: student status/location unknown". Because MDESE does not provide information on dropouts in middle school, there was no possibility of confirming these rates and therefore we do not include them in the main body of the report. We do report them here because the existence of dropouts in middle school is concerning and further investigation by BPS is warranted. If this data truly represents the extent of the dropout phenomena in middle school, in SY2009 about 20.0% of ALL LEP dropouts in BPS were middle school students.

Among these LEP middle school students labeled as "dropouts: student status/location unknown" by SIMS, 60.0% were in the sixth grade and widely distributed among 32 schools with grades 6, 7, and 8. Most of them (54.3%) were in programs not for ELLs. Demographically, the highest proportion of these students were males (58.0%), native Spanish speakers (48.0%) and 79.1% were at the highest levels of MEPA performance (3 & 4 on the 4 point scale).

Demographic Characteristics. Table 23 shows that the most high school dropouts were male, with a rate of 8.0% compared to 4.8% among females. This difference between the dropout rates of the genders was found to be statistically significant. Also significant were the differences in the dropout rates of LEP students who were mobile versus those who were stable and in the rates of groups of different income levels. Among language groups, Spanish, Haitian Creole, and Cape Verdean Creole speakers showed the highest dropout rates. Analysis of the dropout rates of LEP high school students at different MEPA performance levels shows that those at the lowest levels (1 and 2) had the highest dropout rates, 9.2% and 7.4% respectively (Table 24).

The comparison of LEP and EP students shows that the differences in the dropout rates of LEP and EP students were significant only in relation to low income and mobility; in both cases the gap between LEP and EP students was wide.

In addition to comparing the dropout rates of LEP and EP students of different demographic and other characteristics, we also examined the demographic composition of LEP students who dropped out compared to LEP students who did not drop out (Data and statistical analysis appear in Appendix 2). Among LEP students who dropped out in high school grades, there was a higher proportion of: males; those who were not eligible for free or reduced price lunch (not low-income); native speakers of Spanish and Portuguese; mobile students; students with disabilities; and students scoring at MEPA Levels 1-2, as compared to LEP students who did not drop out. All of these differences, except for disability, were found to be statistically significant, but with small or minimal effect size.

Table 23. Annual High School Dropout Rates of Selected BPS Populations of Different Characteristics. BPS, SY2009

	EP		LEP	
	N Dropouts	Dropout Rate[3]	N Dropouts	Dropout Rate[3,4]
All	1,225	7.0%	201	6.6%
Male	746	8.4%	134	8.0%
Female	479	5.5%	67	4.8%
Low Income[1]	642	5.9%	85	3.8%
Not Low Income	583	8.8%	116	14.4%
Native Language[2]				
Spanish	215	7.5%	127	8.5%
Cape Verdean Creole	23	8.4%	21	4.8%
Haitian Creole	18	3.9%	26	5.7%
Mobile	251	18.8%	45	8.3%
Stable	880	5.6%	144	5.8%
SWD	310	9.9%	34	7.7%
Not SWD	915	6.4%	167	6.4%

Notes: [1] Eligible for free or reduced price lunch; [2] Does not include English for either EP or LEP students; other languages are not shown for reasons of confidentiality. [3] The differences in the dropout rates of LEP high school students were significant in relationship to gender (p=.000), income (p=.000), and mobility (p=.030), but with minimal, small and minimal effect sizes respectively. [4] The differences in the dropout rates of LEP and EP students were significant only in relationship to low income and mobility (p=.000, both), although effect sizes were minimal and small respectively.

Table 24. Annual High School Dropout Rates of LEP Students of Different English Proficiency Levels. BPS, SY2009.

	EP	LEP	LEP MEPA Test Takers[1]			
			Level 1	Level 2	Level 3	Level 4
High School[2]	7.0%	6.6%	9.2%	7.4%	5.3%	2.9%

Note: [1] For summer dropouts or students who dropped out in SY2009 without having taken the MEPA, MEPA data was taken from SY08. For SY2009 dropouts who took the MEPA, the highest MEPA score was used from that year: either the fall 2008 administration or the spring 2009 administration, the latter of which was converted to the pre-2009 scale with 4 levels. [2] The differences in dropout rates among high school LEP students were significant only in the comparisons between students scoring at MEPA levels 1 & 3 (p=.004, minimal effect size), 1 & 4 (p=.000, small effect size), 2 & 4 (p=.001,small effect size) and 3 & 4 (p=.012,minimal effect size).

C What Are the Rates of Attendance, Suspension, and Retention of English Language Learners? How Do They Compare to Those of English Proficient Students?

In this section we analyze the behavior of three indicators –attendance, out-of-school suspensions and retention – that have been shown in the educational research literature to be related to the dropout rates of students (Rumberger, 2006).

Median Attendance. The median attendance rate is an indicator of student engagement. In SY2009, the median attendance rate among LEP students was higher than among English proficient students. This is the case district-wide and in elementary and high schools; the differences in median attendance between LEP students and English proficient students both district-wide and in elementary school were statistically significant. Within the LEP student group, median attendance rate was highest among elementary school students, decreasing substantially as grade level increases, which was a pattern that repeated across all groups.

Out-of-School Suspension Rate. Out-of-school suspension is an indicator of discipline problems experienced by students. Taken as a group, LEP students had lower suspension rates (3.8%) than English proficient students. Among elementary and high school students, LEP students had among the lowest rates (2.0% and 2.9% respectively). Differences in rates between LEP and EP students were statistically significant in the aggregate and among middle and high school groups. Out-of-school suspension rates varied by grade level among LEP students, reaching a high of 10.6% among middle school students.

Retention Rate. Retention in grade is usually related to a student's low academic achievement. The retention rate for LEP students was higher than that for any other group overall and in elementary and high school levels. Among LEP students, retention rates were highest among high school students; at 20.9%; the high school retention rate was more than triple that of elementary school students and four times that of middle schoolers.

Table 25. Median Attendance, Out-of-School Suspensions and Retention Rates of Students of Different Language Proficiencies, K-12. BPS, SY2009

	All BPS	EP	LEP
Median Attendance Rates[1]			
All	94.4%	94.4%	95.5%
Elementary School	95.5%	95.0%	96.1%
Middle School	95.0%	95.4%	95.0%
High School	92.7%	92.5%	92.8%
Out-of-School Suspension Rates[2]			
All	5.8%	6.3%	3.8%
Elementary School	3.0%	3.3%	2.0%
Middle School	11.7%	12.0%	10.6%
High School	5.8%	6.4%	2.9%
Retention Rates (SY2008-SY2009)[3]			
All	7.0%	6.5%	9.5%
Elementary School	4.6%	4.1%	6.0%
Middle School	4.6%	4.5%	5.0%
High School	11.6%	10.3%	20.9%

Notes: [1] Significance of the differences in attendance rates between LEP and EP students was tested using a T-test. The differences were significant among students in all grade levels and among students in elementary grades (p=.000). [2] Differences between LEP and EP students in regard to out-of-school suspensions was tested using Chi^2. Differences were found to be significant among students in all (p=.000, minimal effect size); elementary (p=.000, minimal effect size); and high school (p=.000, minimal effect size) grade levels. [3] Differences between LEP and EP students in regard to retention were also tested using Chi^2. Differences were found to be significant among students in all (p=.000, minimal effect size); elementary (p=.000, minimal effect size); and high school (p=.000, small effect size) grade levels.

IN DEPTH:

Retention in Grade 9

One of the reasons for the high retention rate among high school LEP students is the practice of holding students back in ninth grade, in some cases for more than one year. We examined the proportion of ninth graders enrolled in BPS all of the previous three years who had been retained in ninth grade. Of these 311 ELL ninth graders in SY2009: 38.2% had been retained at least once and 26% had been retained only once; 7.1% had been retained twice; and, 5.1% had been retained three times.

D What Are the Attendance, Out-of-School Suspension, and Retention Rates of English Language Learners with Different Characteristics?

In this section we compare the median attendance, out-of-school suspension, and retention rates of LEP students with different demographic characteristics and present both the descriptive and statistical significance of those differences. As background we also compare, when relevant, the outcomes along these indicators of all BPS students and of English proficient students.

Median Attendance Rate. Table 26 presents the median attendance rate of different populations of BPS students in Grades K-12. The median attendance rate of LEP students is, overall, higher than that of English proficient students and of all BPS students regardless of most demographic characteristics considered. The only exceptions are higher-income students and English proficient native speakers of Chinese languages, Somali, and Vietnamese students, among whom the rate of attendance was higher.

Comparisons of the median attendance of LEP students along demographic variables shows that the differences in the median attendance rate between males and females, low and not low income, mobile and stable, and SWD and not SWD are all statistically significant. Females tended to have a slightly, but significantly, higher median rate of attendance when compared to males. Low-income and mobile students had lower rates of attendance than their opposites, as did LEP-SWD students.

Differences in median attendance rates among students at different MEPA performance levels were also found to be significant, with LEP students at higher levels of MEPA performance showing higher rates of attendance.

Among LEP students from different language groups, native speakers of Chinese languages (98.3%) and Haitian Creole (97.2%) had the highest median attendance rate while native Spanish speakers, at 94.1% median attendance, had the lowest. Among all LEP students, median attendance rates were found to be highest among elementary school students and to decline as grade level increased. The differences in the patterns of attendance among students at different performance levels were found to be statistically significant. The data and analysis of median attendance rates by grade and language proficiency appear in Table 29.

Out-of-School Suspension Rate. Table 27 presents the out-of-school suspension rates of different populations of BPS students in Grades K-12. With the exception of Haitian Creole and Somali native speakers, out-of-school suspension rates were lower among LEP students than among English proficient students along all characteristics considered here. Comparing the out-of-school suspension rate of LEP students along demographic variables shows that only the differences in the suspension rate between males and females and SWD and not SWD are all statistically significant. Females had a substantially lower rate of suspensions than males, and LEP-SWD students had a higher rate of suspension than students not identified as SWD.

Table 26. Median Attendance Rates of Students of Different Characteristics, K-12. BPS, SY2009

	All BPS	EP	LEP
Median Attendance Rates[4]			
All	94.4%	94.4%	95.5%
Male	94.4%	94.4%	95.0%
Female	94.7%	94.4%	95.6%
Low Income[1]	94.4%	93.9%	95.5%
Not Low Income	95.6%	95.6%	95.0%
Native Language[2]			
Spanish	93.9%	93.9%	94.1%
Cape Verdean Creole	96.1%	95.0%	96.7%
Chinese languages	98.9%	98.9%	98.3%
Haitian Creole	96.7%	96.6%	97.2%
Portuguese	94.4%	93.9%	94.4%
Somali	95.6%	95.8%	95.2%
Vietnamese	96.7%	96.7%	96.6%
Other languages	96.1%	96.6%	95.6%
English Proficiency Level			
MEPA Levels 1 and 2	NA	NA	94.4%
MEPA Level 3			95.4%
MEPA Levels 4 and 5			96.7%
Mobile	90.2%	88.3%	93.8%
Stable	94.9%	94.4%	95.6%
SWD[3]	92.8%	92.8%	93.9%
Not SWD	95.0%	94.8%	95.6%

Notes: [1] Eligible for free/reduced lunch; [2] Does not include English for either EP or LEP students. [3] Includes students ages 6+ in K-12. [4] The difference in attendance rates between EP and LEP students is significant (p=.000). Among LEP students, the differences in the attendance rates between males and females, low and not low income, mobile and stable and SWD and not SWD are all significant (p=000 for all). Differences in attendance rates among LEP students at different MEPA performance levels were also found to be significant (MEPA L1&2 vs. other, p=.000; MEPA L3 vs. other, p=.011; MEPA L4&5 vs. other, p=.000).

Among LEP students from different language groups, native speakers of Spanish, Haitian Creole and Somali experienced the highest rates of out-of school suspension: 4.8%, 3.9%, and 3.4%, respectively. Other substantive but not statistically significant differences along demographic variables were those found between low/higher income and mobile/stable LEP students.

Among all LEP students, out-of school suspensions were found to be highest among middle school students. This pattern was repeated among LEP students at all English proficiency levels. The differences in the patterns of out-of-school suspension rates across LEP students at different levels of proficiency were not found to be significant. The data and analysis of out-of-school suspension rates by grade and language proficiency appear in Table 29.

Retention Rate. The grade retention rates of different populations of BPS students in Grades K-12 are found in Table 28. The retention rate was higher among LEP students regardless of the demographic variable considered. In some cases, the differences between LEP and EP students were substantive as is the case of the retention rates of higher-income students, and of native Cape Verdean Creole, Haitian Creole, and Somali speakers.

Table 27. Out-of-School Suspension Rates of Students of Different Characteristics, K-12. BPS, SY2009

	All BPS	EP	LEP
Out-of-School Suspension Rates[4]			
All	5.8%	6.3%	3.8%
Male	7.9%	8.6%	5.0%
Female	3.6%	3.9%	2.3%
Low Income[1]	6.3%	7.0%	3.8%
Not Low Income	4.4%	4.5%	3.5%
Native Language[2]			
Spanish	4.9%	4.9%	4.8%
Cape Verdean Creole	3.5%	5.8%	2.2%
Chinese languages	1.1%	1.5%	0.6%
Haitian Creole	3.8%	3.7%	3.9%
Portuguese	4.2%	6.8%	1.7%
Somali	3.2%	2.8%	3.4%
Vietnamese	2.3%	2.8%	1.5%
Other languages	3.2%	3.2%	3.2%
English Proficiency Level			
MEPA Levels 1 and 2	NA	NA	3.9%
MEPA Level 3			3.8%
MEPA Levels 4 and 5			3.7%
Mobile	9.0%	11.4%	3.5%
Stable	5.5%	5.9%	3.8%
SWD[3]	11.3%	12.1%	8.0%
Not SWD	4.5%	4.9%	2.8%

Notes: [1] Eligible for free/reduced lunch; [2] Does not include English for either EP or LEP students. [3] Includes students ages 6+ in K-12. [4] The difference in the out-of-school suspension rate between EP and LEP students is significant (p=.000, minimal effect size). The differences in the rates of out-of-school suspensions between males and females and SWD and not SWD are all statistically significant (p=.000 for both, with minimal and small effect size respectively). The differences in suspension rates among students at different levels of English proficiency were not significant.

Table 28. Retention Rates of Students of Different Characteristics, K-12. BPS, SY2009

	All BPS	EP	LEP
Retention Rates (SY2008-SY2009)[4]			
All	7.0%	6.5%	9.5%
Male	8.2%	7.7%	10.5%
Female	5.8%	5.2%	8.3%
Low Income[1]	6.9%	6.5%	8.6%
Not Low Income	7.3%	6.4%	16.7%
Native Language[2]			
Spanish	8.3%	7.3%	9.3%
Cape Verdean Creole	12.8%	7.7%	16.6%
Chinese languages	2.5%	0.9%	5.2%
Haitian Creole	7.9%	4.4%	11.6%
Portuguese	7.6%	5.5%	9.7%
Somali	11.5%	3.3%	17.9%
Vietnamese	4.0%	3.7%	4.7%
Other languages	5.3%	3.6%	7.2%
English Proficiency Level			
MEPA Levels 1 and 2	NA	NA	18.5%
MEPA Level 3			9.1%
MEPA Levels 4 and 5			3.5%
Mobile	17.4%	17.2%	18.2%
Stable	6.6%	6.0%	9.1%
SWD[3]	10.4%	10.2%	11.2%
Not SWD	6.1%	5.5%	9.0%

Notes: [1] Eligible for free/reduced lunch; [2] Does not include English for either EP or LEP students. [3] Includes students ages 6+ in K-12. [4] The difference in the retention rate between EP and LEP students is significant (p=.000, minimal effect size). Among LEP students, the differences in the retention rates between males and females (p=.000), low and not low income (p=.000), mobile and stable (p=.000), and SWD and not SWD (p=.004) are all significant but with minimal effect size. The differences in retention rates among LEP students at different levels of English proficiency were found to be significant (MEPA L1&2 vs. other, p=.000, small effect size; MEPA 3 vs. other, p=.001, minimal effect size; MEPA 4&5 vs. other, p=.000, small effect size).

Table 29. Attendance, Out-of-School Suspension and Retention Rates of LEP Students of Different English Proficiency Levels and Different Grade Levels. BPS, SY2009.

	EP	LEP	LEP MEPA Test Takers		
			Levels 1 & 2	Level 3	Levels 4 & 5
Median Attendance[5, 6]					
All[1]	94.4%	95.5%	94.4%	95.5%	96.7%
Elementary School[2]	95.0%	96.1%	94.4%	95.6%	96.7%
Middle School[3]	95.4%	95.0%	95.0%	95.6%	96.1%
High School[4]	92.5%	92.8%	92.7%	94.4%	95.0%
Out-of-School Suspension[7, 8]					
All[1]	6.3%	3.8%	3.9%	3.8%	3.7%
Elementary School[2]	3.3%	2.0%	1.7%	2.0%	2.3%
Middle School[3]	12.0%	10.6%	11.6%	11.2%	10.1%
High School[4]	6.4%	2.9%	3.4%	2.6%	2.0%
Retention (SY2008-SY2009)[9,10]					
All[1]	6.5%	9.5%	18.5%	9.1%	3.5%
Elementary School[2]	4.1%	6.0%	11.3%	7.4%	3.1%
Middle School[3]	4.5%	5.0%	7.6%	4.2%	3.0%
High School[4]	10.3%	20.9%	43.8%	16.2%	5.5%

Note: [1] Includes K-12; [2] Includes grades K-5. [3] Includes grades 6, 7 and 8. [4] Includes grades 9-12. [5] The statistics for the differences in the median attendance rate among all students and students scoring at different MEPA levels appear in Table 26. [6] Difference in median attendance rates between EP and LEP students are only significant at the elementary school level (p=.000). Differences in median attendance rates across students at different levels of English proficiency were found to be significant at elementary (MEPA L1&2 vs. other, p=.000; MEPA L3 vs. other, p=.001; and MEPA L4&5 vs. other, p=.000); middle (MEPA L1&2 vs. other, p=.007; MEPA L3 vs. other, p=.027; and MEPA L4&5 vs. other, p=.000); and high school grade levels (MEPA L1&2 vs. other, p=.000; MEPA L3 vs. other, p=.002; and MEPA L4&5 vs. other, p=.000). [7] The statistics for the differences in out-of-school suspension rates among all students and students scoring at different English proficiency levels appear in Table 27. [8] Difference in out-of school-suspensions between EP and LEP students at different grade levels are significant at the elementary and high school levels (p=.000, minimal effect size). Differences in out-of school-suspensions across LEPs scoring at different English proficiency levels were not found to be significant at any grade level. [9] The statistics for the differences in retention rates among all students and LEP students scoring at different English proficiency levels appear in Table 28. [10] Difference in retention between EP and LEP students at different grade levels are significant at the elementary and high school levels (p=.000, minimal and small effect size, respectively). Differences in retention across English proficiency groups at different grade levels were among elementary school students (MEPA L1&2 vs. other, p=.000, small effect size; MEPA L3 vs. other, p=.000, minimal effect size; and MEPA L4&5 vs. other, p=.000, small effect size); among middle (MEPA L1&2 vs. other, p=.005, minimal effect size; MEPA L4&5 vs. other, p=.033, minimal effect size); and high school students (MEPA L1&2 vs. other, p=.000, medium effect size; MEPA L4&5 vs. other, p=.000, small effect size),

Comparisons of the retention rate of LEP students along demographic variables show that the differences in the retention rates between males and females, low and not low income, mobile and stable, and SWD and not SWD are all significant but with minimal effect size. Males had a higher rate of retention than did females, and higher-income students had almost twice the retention rate of lower-income students. Similarly large and significant differences can be found among mobile and stable LEP students and among students at different levels of English proficiency, as measured by MEPA performance levels. Among the latter, LEP students at MEPA Levels 1 and 2 were retained in grade three times more frequently than students at MEPA Levels 4 and 5 and twice as frequently as students at MEPA Level 3. The highest rates of retention among LEP students can be found among Somali, Haitian Creole, and Cape Verdean Creole speakers.

Among all LEP students, the highest rates of retention took place among high school students, where at 20.9%, their rates were three times those of elementary school students and four times those of LEP students in middle school. The same pattern is observable among English proficient students but with much less intensity. It is also observable across all levels of English proficiency among LEP students but at an extreme particularly among LEP high school students in scoring at Levels 1 and 2 of MEPA: among them the rate of retention is 43.8%. The data and analysis of retention rates by grade and language proficiency appear in Table 29.

IN DEPTH:

Absenteeism, Suspensions, Retention, and Dropping Out

In this "in depth" view we focus on the impact of high absenteeism, discipline problems, and retention in grade, all of which have been well documented in the literature as key individual factors in dropping out. We compare the median attendance rate, the suspension rate, and the retention rate of high school students who dropped out and who remained in school in 2009 (Table 30). We found that among LEP students who dropped out in SY2009, the median attendance was much lower (63.1%) than among those who stayed in school and that the difference in attendance rate between the two groups was statistically significant. Similarly, the suspension rate among those LEP students who dropped out was more than twice that of those LEP students who remained in school and this difference was also significant. Finally, we examine the rate of retention and found a higher proportion of students retained in grade among the dropouts than among those who did not drop out; this difference was also statistically significant. The situation of EP students mirrors that of LEP students.

Table 30. Attendance, Suspension and Retention of High School Dropouts. BPS, SY2009

	EP		LEP[1]	
	Dropped Out	Did Not Drop Out	Dropped Out	Did not Drop Out
Median Attendance Rate	56.8%	87.7%	63.1%	87.1%
Suspension Rate	11.9%	6.6%	6.3%	3.0%
Retention Rate	42.7%	8.8%	34.9%	19.8%

Note: [1] The differences in attendance rates, suspension rates and retention rates between LEPs who dropped out and those who stayed in school were all found to be statistically significant (p= .000, p=.011 with minimal effect size, and p=.000 with minimal effect size, respectively).

E What Are the Annual High School Dropout Rates of English Language Learners in Different Types of Schools and Programs?

In this section we consider the differences in the dropout rates of LEP students in different types of schools and programs. The presentation of data is more limited than in other chapters, because the number of students is relatively small and they disaggregated across a relatively large number of programs and school characteristics. Therefore, in some cases, we are unable to report findings for reasons of confidentiality.

Dropout Rates in Schools of Different Characteristics. We re-visit first the characteristics of schools presented earlier and present the dropout rates for LEP high school students at these schools. As a point of comparison we present the high school dropout rates for all BPS students and for all LEP students (Table 31).

Differences in the poverty rate of schools, the density of their LEP student enrollment, attainment of AYP goals and the qualifications of their teachers were all statistically significant school characteristics in relation to the dropout rate of LEP high school students. The dropout rate among students in schools with a poverty rate between 25% and 75% was almost three times that of schools with

Table 31. Annual High School Dropout Rates among LEP students in Schools of Different Characteristics. BPS, SY2009

	Annual High School Dropout Rate	
	N	Rate
All BPS	1,426	6.9%
All LEPs	201	6.6%
School Size		
Large High School	77	5.8%
Medium High School	36	6.3%
Small High School	88	7.6%
Poverty Rate of School [1]		
Poverty rate 25-75%	151	9.6%
Poverty rate >75%	50	3.4%
LEP Density [1]		
0-10%	21	8.8%
10.1-30%	114	5.3%
30.1-50%	51	11.6%
>50%	15	6.7%
Accountability Status [1]		
Met AYP in ELA	51	4.0%
Did not meet AYP in ELA	110	7.1%
Met AYP in Math	40	7.2%
Did not meet AYP in Math	121	5.3%
Teacher Qualifications [1]		
% of teachers licensed in teaching assignment, above district average (>97.9%)[1]	109	7.3%
% of teachers licensed in teaching assignment, at/below district average (<=97.9%)[1]	92	5.9%
% of core academic classes taught by highly qualified teachers, above district average (>95.9%)[2]	85	8.5%
% of core academic classes taught by highly qualified teachers, at/ below district average (<=95.9%)[2]	116	5.6%

[1] Differences in the poverty rate of schools (p=.000, small effect size); the density of their LEP student enrollment (0-10% vs. other p=.000, minimal effect size; 30.1-50% vs. other p=.000, minimal effect size); attainment of AYP goal for ELA (p=.001,minimal effect size); and the qualifications of their teachers (license, p=.000, minimal effect size; HQT, p=.001, minimal effect size) were all statistically significant school characteristics in relationship to the dropout rate of LEP high school students.

higher poverty rates; this is an unexpected finding. Differences in the density of LEP student enrollment were also significant in terms of dropout rate for LEP students, with the highest rates occurring in schools with lower concentrations of LEP students. Dropout rates were higher in schools that did not meet AYP goals in ELA and where highly qualified teachers teach a lower percentage of core academic classes.

To recap, school poverty and LEP densities are variables to watch in relation to the dropout rate of LEP students, but in somewhat unexpected ways. High school dropout rates are higher in schools with poverty rates in the middle range, when the expectation would be that dropout rates would be higher in highest poverty schools. In the case of LEP density, high school dropout rates are highest at lower density schools. These results bear further study.

Dropout Rates in Different Types of Programs. Annual high school dropout rates were higher among LEP students not in ELL programs (8.7%) than among those in ELL programs (5.9%); this difference is statistically significant. Level 1 and 2 students not in ELL programs showed the highest dropout rates; for example, the dropout rate of Level 2 LEP students not in an ELL reached a high of 13.0% while LEP students in ELL programs at the same MEPA level had a dropout rate of less than half that, 6.4%. Among students in ELL programs the highest dropout rates were found among SEI students (6.5%). Among SEI students, those at MEPA Levels 1 and 2 also showed much higher rates than students at the higher levels of English proficiency.

Table 32. Annual High School Dropout Rates of LEP students in ELL programs by English Proficiency Level. BPS, SY2009.

	LEP[1]	LEP MEPA Test Takers			
		Level 1[2]	Level 2[3]	Level 3[4]	Level 4[5]
Annual High School Dropout Rates					
Rate of English Proficient	7.0%				
All	6.6%	9.2%	7.4%	5.3%	2.9%
LEPs Not in an ELL Program	8.7%	12.2%[6]	13.0%[6]	9.7%	4.3%
LEPs In ELL Program[7]	5.9%	9.0%	6.4%	3.5%	2.3%
SEI	6.5%	10.4%	7.1%	3.8%	2.6%
Other bilingual (TBE and SIFE)	1.2%[2]	3.0%[2]	0%	0%	0%

Note:. [1] The differences in the high school dropout rates between the following groups of LEP students were significant: in and not in programs (p=.006, minimal effect size); SEI and other bilingual programs (p=.001, minimal effect size); SEI and not in program (p=.038, minimal effect size); and other bilingual program and not in program (p=.000, small effect size). [2] The differences in the high school dropout rates between the following groups of LEP students scoring at MEPA Level 1 were significant: SEI and other bilingual program (p=.021, small effect size) and other bilingual program and not in program (p=.047, small effect size). [3] The differences in the high school dropout rates between LEP students scoring at MEPA Level 2 in different programs were not significant. [4] Differences in the high school dropout rates between the following groups of LEP students scoring at MEPA Level 3 were significant: in and not in programs (p=.000, small effect size); SEI and not in program (p=.000, small effect size); and other bilingual and not in program (p=.034, small effect size). [5] Differences in the high school dropout rates of LEP students scoring at MEPA Level 4 were not significant when comparing by ELL program type. [6] Represents less than 10 students. [7] Not all ELL programs appear here because (a) there are no Two-Way programs in high schools and (b) this analysis is based on SIMS data which does not disaggregate SEI programs or other bilingual programs.

IN DEPTH:

A Brief Look at LEP Dropouts and MCAS

Participation in a high-stakes testing regime, especially where graduation depends on testing outcomes, is often mentioned as a precipitant of dropout behavior among students in reaction to fear of the tests or to having failed them. We explore this question by conducting a small retrospective cohort study of twelfth grade LEP students who dropped out in SY2009 and observing their Grade 10 MCAS testing outcomes in the three years that preceded the dropout behavior (i.e., tests taken at any point between Grades 10 and 12, as is possible under the MCAS system). All were BPS students for the whole study period.

Forty-nine LEP twelfth graders dropped out in SY2009. Of these dropouts:

- 10.2% (5 students) dropped out in twelfth grade having never taken neither the tenth grade MCAS ELA nor the tenth grade MCAS Math exams between SY2006-SY2009.
- 22.4% (11) passed both the Grade 10 MCAS ELA and Grade 10MCAS Math exams at some point during the period SY2006-SY2009.
- 63.2% (31) failed one or both tenth grade MCAS ELA and Math exams.

  + 22.4% (11) of the dropouts dropped out having failed both the Grade 10 MCAS ELA and Grade 10 MCAS Math exams.

  + 10.2% (5) dropped out having failed one Grade 10 MCAS exam and having never taken the other Grade 10 MCAS exam.

  + 30.6% (15) dropped out having taken both exams but only having passed one of them (5 passed ELA, 10 passed Math).

This indicates that a much higher percentage of LEP dropouts in SY2009 had failed one or both MCAS tests required for graduation.

In Sum

This chapter has focused on a critical issue in regard to the education of LEP students: their high rates of dropping out. Between SY2006 and SY2009, the dropout rates of high school students declined substantially; by SY2009, the high school dropout rate of LEP students was lower than that of English proficient students. Among LEP students, the largest proportion of dropouts (53.2%) left school in the late high school grades.

Many of the factors associated in the literature with higher rates of dropping out in high school (and for which data were available) have been reviewed here. For example, in our review of the interaction of demographic factors and dropout behavior among LEP students we found that differences in gender, income, and mobility were found to be significant in the dropout rates of LEP students in high school. English proficiency was also a factor; higher rates of dropping out were found among the students scoring at the lowest levels of MEPA performance.

Comparisons of the characteristics and behavior of LEP high school students who dropped out with those of students who remained in school, showed that among dropouts there was a higher proportion of males; of those who were not eligible for free or reduced price lunch (not low-income); of native speakers of Spanish and Portuguese; of mobile students; of students with disabilities; and students scoring at MEPA Levels 1 and 2, as compared to LEP students who did not drop out. All of these differences, except for disability, were found to be statistically significant. LEP students who dropped out of high school in SY2009 had a significantly lower median attendance rate and significantly higher out-of-school suspension and retention rates than those who did not drop out.

Factors related to schools characteristics and program participation were also reviewed and some proved to be significant in the dropout rates of LEP students. For example, the high school dropout rate is lower among LEP students enrolled in ELL programs than among those in programs not for ELLs. The same is true across LEP students at all levels of English proficiency. Dropout rates among students not in ELL programs are particularly high among those scoring at the lower levels of MEPA. Finally, differences in a school's LEP density, accountability status, and teacher qualifications were found to be significant in relation to the dropout rate of LEP high school students.

[1] We are not able to test some of these variables because of the unavailability of data.
Tung et al. show a slightly higher high school dropout rate (12.1%) in SY2006 than the data used for this study showed for the same year.

[2] For a description of the methodology used to assess the dropout rates for this study and for a comparison of MDESE dropout data for Boston with that produced by the database developed for this project, see Appendix 1. Information on the dropout rates of sub-populations of English proficient students can be found in Appendix 2.

CHAPTER

VIII.

MCAS RESULTS

The tests of the Massachusetts Comprehensive Assessment System (MCAS), established as part of the Massachusetts Educational Reform Act of 1993, have been the most prevalent measure of academic achievement in Massachusetts for more than a decade (Commonwealth of Massachusetts, 1993). The MCAS is used to meet the requirements of the state's Chapter 386 and the federal No Child Left Behind Act for the yearly assessment of progress in academic areas on the part of all students, including LEP students. The state requires that this assessment of the academic achievement of students of limited English proficiency be conducted using a standardized test in English.[1] At the time of this study's observations, MCAS tested English Learners in Reading (Grade 3), English Language Arts (Grades 4, 5, 6, 7, 8, and 10), Math (Grades 3, 4, 5, 6, 7, 8, and 10), and Science (Grades 5 and 8 in SY2006-SY2008 and 5, 8, and 9/10 in SY2009) (Massachusetts Department of Education, 2008b). During the SY2006–SY2009 period, high school LEP students were required to pass Grade 10 Math and ELA in order to graduate from high school.

At the center of the debate regarding the academic achievement of English language learners in the United States is the measure used to assess it. There are concerns about the validity of the standardized tests normed only for English proficient students, particularly those measuring proficiency in content areas, since the results may be more a reflection of students' English proficiency than of their knowledge of the content tested (August & Hakuta, 1997; Menken, 2000). Others point to ELLs' lack of cultural knowledge, knowledge that is assumed on tests standardized on an American English speaking student population (Mercer, 1989). Still others focus on the inequity of assessment practices used with ELLs: the "testing frenzy" resulting from the practice of assessing prematurely and intensely and the "violation of what we know about the relationship between academic learning proficiency and content proficiency, the validity of high-stakes tests for this population, and the matching of test to the population" (Garcia & Kleifgen, 2010). Those who favor the inclusion of ELLs in taking tests developed for English proficient students express that, in spite of the limitations, testing is a vehicle for insuring that the same accountability that keeps standards high for English proficient students applies to ELLs (Coltrane, 2002).

The fact is that in spite of the understanding of the inappropriateness of using standardized tests with ELLs who are not proficient in English, they continue to be widely used. In some cases, states offer accommodations modifying test questions, allowing extra time to complete the tests, translating the tests, testing content in L1, etc. (Garcia & Kleifgen, 2010; Lindholm-Leary & Borsato, 2006). Massachusetts allows few accommodations: LEP students are not required to take the ELA exam (at the district's discretion) in the first year in which a child is enrolled in a U.S. school, but both Math and Science are required even at this early stage of English language development. Beyond that, Spanish speaking ELLs who have been in U.S. schools for less than three years may take a Math test in Spanish in Grade 10, and any LEP student is allowed to use a dictionary on all MCAS tests.

In spite of the serious concerns regarding the appropriateness of the MCAS as the main (and often sole) measure of student achievement, at this point it is the measure that allows comparisons of student performance across time, groups, and districts. The ability to conduct these analyses in Massachusetts, in other states, and nationally is relatively recent since for many years there was concern about the dearth of information regarding the outcomes of LEP students in educational programs (Coltrane, 2002). For example, DeJong, Gort, and Cobb (2005) in their review of 30 years of bilingual education in Massachusetts, found there was no evidence of assessments of the progress on English language acquisition on the part of ELL students, and concluded that their academic achievement was unknown (pp. 597-598).[2]

Today, most of the research related to the academic achievement of ELLs is embedded in the evaluation of different types of programs. Researchers have often compared the outcomes of LEP students in ELL programs with those of English proficient students (usually monolingual students in general education programs). In their detailed review of this research, Lindholm-Leary and Borsato (2006) concluded that programs designed for ELLs promote equivalent (and often higher) outcomes than mainstream programs for proficient students. In comparing various ELL programs with English proficient students in regular programs, the early lag in English and math experienced by LEP students in programs for ELLs gives way to similar outcomes by the end of elementary school. At times, LEP students surpassed English proficient students by middle school, particularly in math (Burnham-Massey and Pina, 1990 as referenced in Lindholm-

Leary and Borsato, 2006, p. 179). This pattern of educational results is also evident in other measures of achievement such as grades, graduation rates, and college-going. "The lower scores in the initial grades," conclude Lindholm-Leary and Borsato (p. 185), "may account for the popular misperception that bilingual education is an ineffective means for educating ELLs."

Research on the outcomes of students in different types of programs designed specifically for ELLs is also relevant. These programs can be classified according to purpose: "transitional," "maintenance," and "enrichment." Boston's programs include transitional programs such as SEI which are designed to have students gain fluency in English and move students into regular education. Transitional bilingual programs (early and late exit) and SIFE programs are essentially maintenance progams that allow students to learn content in their own language while acquiring English at their own pace. The enrichment model – i.e., two-way or dual immersion programs – is designed for all students to add a language. English speakers who participate in these programs add a second language, while English learners preserve their home language and acquire English (Rivera, 2002). The relative benefit of length of time in transitional bilingual programs, amount of language instruction, and combinations of first and second language provided in instruction is still ambiguous, according to Goldenberg (2008). At this time, the debate focuses on the relative advantage of different forms of transitional and maintenance programs (Transitional Bilingual Education and Sheltered English immersion, for example) and comparisons between transitional and additive programs (for example, Two-Way Bilingual programs). There are concerns about the definitions of programs and the specifics of the design and findings of several key studies (including August & Hakuta, 1997; Ramirez, Pasta, Yuen, Ramey, & Billings, 1991; Thomas & Collier, 2002).

Nevertheless, the review conducted by Lindholm-Leary and Borsato (2006) points to higher achievement in both math and reading in bilingual and two-way programs than in SEI (Ramirez, 1992; Thomas & Collier, 2002), while studies of SEI emphasize the early language acquisition achieved under immersion programs. Studies in states that have implemented laws similar to Massachusetts' restrictions in the use of the students' native language in instruction include the evaluation of the California ELL programs by Parrish et al. (2006). They measured outcomes in high-stakes testing, in relation to different instructional methods, student re-designation, and student engagement. In terms of performance on high-stakes tests, the authors reported that the achievement gap remained virtually constant in most subjects for most grades. Given the slight changes in performance overall, pending questions about the data, the authors concluded that overall, "there is no clear evidence to support an argument of the superiority of one EL instructional approach over another" (p. ix).

Far fewer studies compare the achievement of LEP students in ELL programs to those not in ELL programs. One such study by Thomas and Collier (2002) focused on four school districts with LEP enrollments and found that LEP students who had not participated in ELL programs had the lowest testing outcomes and the highest dropout rates compared to students who had participated in any type of ELL program.

The research also focuses on individual and school factors that affect the academic performance of ELLs. Demographic variables are described in Chapter IV and summarized here. Gender, immigration status, poverty status, and English proficiency have all been found to be associated with the achievement of LEP students. The effect of gender on school achievement has been documented and in some cases it has been found to favor females and in others males (Brown et al., 2010; Callahan et al., 2010; Rumberger & Thomas, 2000; Wang et al., 2007).Poverty status is one of the strongest predictors of academic achievement, both directly and through its effects on a student's health status, nutrition, and the resources available to the student (Braun et al., 2006; Hao & Bonstead-Bruns, 1998; Lee & Smith, 1999; Rothstein, 2004; Werblow & Duesbery, 2009). Closely related to income status as a factor in academic achievement is a student's geographic mobility –that is, his/her change of schools due to the family's physical move within a school year (Rumberger & Palardy, 2005; Rumberger & Thomas, 2000). Race is also a well-documented marker of school achievement, both on its own and in its interaction with poverty and immigrant status in the life of students (see Kao & Thompson, 2003 for a review). English proficiency, as was discussed in Chapter V, is also associated with academic performance in English (Dawson & Williams, 2008; Hao & Bonstead-Bruns, 1998; Wang et al., 2007). A student's attendance and discipline history are significant predictors of both dropout rates and

student achievement (Rumberger, 1995; Rumberger & Palardy, 2005; Rumberger& Thomas, 2000). Finally, research on achievement among ELL students (Wang et al., 2007) has found that special education status is also significant. This variable is sometimes difficult to interpret as a result of the overrepresentation of ELL students in special education referrals (Hosp & Reschly, 2004), as was discussed in Chapter III.

School-level factors (described in Chapter III) are also related to the academic achievement of students. For example, school size has been found to have a significant effect on student achievement and the likelihood of dropping out (Lee & Bryk, 1989; Lee & Smith, 1999; Rumberger & Palardy, 2005; Wang et al., 2007; Werblow & Duesbery, 2009). The percentage of students who are of low income (Braun et al., 2006; Hao & Bonstead-Bruns, 1998; Lee & Smith, 1999; Werblow & Duesbery, 2009), percentage of students who are LEP (Werblow & Duesbery, 2009), and percentage of students whose families move within a school year (Rumberger & Palardy, 2005; Rumberger& Thomas, 2000) have also been linked to the individual performance of students on achievement tests. Another key school-level variable in educational research is school quality, which is measured in various ways. Most common are the percentage of teachers who are highly qualified and the percentage of teachers who are licensed in their subject (Braun et al., 2006; Munoz & Chang, 2008; Rumberger & Palardy, 2005; Rumberger& Thomas, 2000). In all of these studies higher school quality is associated with improved educational outcomes.

In this study we use MCAS as it is traditionally used: to compare results across time, populations, and programs. In addition, we cross-tabulate MCAS outcomes and MEPA performance in order to assess the performance of students in schools and in programs and to compare the outcomes of different sub-groups of ELLs. In these comparisons we use only the MCAS outcomes of students at MEPA performance Levels 4 and 5 since only for these students do we have some confidence that the MCAS is measuring knowledge and understanding of content and not just English proficiency.

In assessing the differences in outcomes between programs and schools we must introduce a caveat: that this study has not permitted an assessment of the characteristics of the programs themselves (or in evaluation terms, the "treatment" to which students are exposed). Although the accompanying study, ***Learning from Consistently High Performing and Improving Schools for English Language Learners in Boston Public Schools***, sheds some light on this for four programs, we are not aware of the specific practices that are taking place in most programs and schools as we review the outcomes of their students. In other words we are not certain that schools are appropriately identifying the kind of instruction they are conducting (e.g., TBE vs. another model) or, given this and the kind of data we have available, that we can determine distinct categories of programs. According to the literature, this is a common problem because of the variety of ways in which individual districts, schools, and, ultimately teachers, interpret the meaning of "bilingual," of "SEI," of "two-way," and of "TBE" programs and the wide variety of experience and skill that teachers bring to the implementation of it in the classroom. Nevertheless, it does represent a problem to those trying to assess the characteristics and quality of programs and the outcomes of students in them (Lindholm-Leary & Borsato, 2006, p. 201) and ours is no exception.

A How Do MCAS Pass Rates of English Language Learners Compare with Those of English Proficient Students? How Have the MCAS Outcomes of English Language Learners Changed through Time?

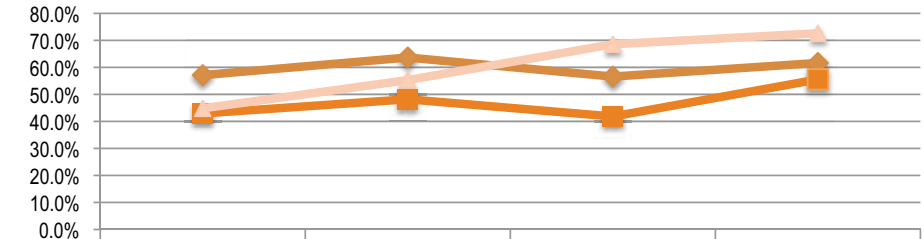
There is substantial evidence that between SY2006 and SY2009 LEP students made strong gains in academic achievement as measured by the MCAS. Comparing students' performance in SY2009 to performance in SY2006, we found that ELA, Math, and Science pass rates rose at every grade level without exception and the gaps in MCAS scores between LEP students and EP students declined, also across grades and subjects without exception. Yet, in spite of this advance, the pass rates remained very low and LEP student pass rates for all subjects were the lowest of all groups considered here. We first present the traditional view of scores for LEP students: in the aggregate. However, as discussed later in this section, when LEP students are disaggregated by MEPA performance level, we find that LEP students at the highest levels of English proficiency tended to outscore their EP peers.

Table 33. MCAS ELA Pass Rates of Students of Different Language Proficiencies. BPS, SY2009

	All BPS	EP	LEP
4th grade	76.5%	79.9%	61.6%
8th grade	88.5%	92.2%	55.6%
10th grade	92.3%	95.2%	72.6%

Notes: Differences in the MCAS ELA outcomes between LEP students and students proficient in English are significant for all grade levels Chi^2, ($p<.000$) but the effect sizes are small in the case of 4th and 10th grade and medium in the case of 8th grade.

Figure 10. MCAS ELA Pass Rates of LEP Students. BPS, SY2006-SY2009



	SY2006	SY2007	SY2008	SY2009
4th	57.1%	63.7%	56.6%	61.6%
8th	42.9%	48.2%	41.8%	55.6%
10th	44.8%	55.3%	68.6%	72.6%

MCAS ELA Pass Rates

LEP pass rates in MCAS ELA were highest among tenth graders, among whom 72.6% passed MCAS ELA in SY2009. At 55.6%, pass rates were lowest among middle school students. Across all grade levels, MCAS ELA pass rates for LEP students were the lowest when compared to all BPS students or to English proficient students (Table 33). Nevertheless, ELA pass rates improved across all grades and were most salient among eighth and tenth grade students (Figure 10). Gaps in pass rates between LEP and EP students decreased across all grade levels between SY2006 and SY2009. The most salient decline was in Grade 10, where the gap was more than halved. In spite of these declines, pass rate gaps between LEP and EP students continued to range between 18 and 36 percentage points in SY2009 (Appendix 2).

MCAS Math Pass Rates

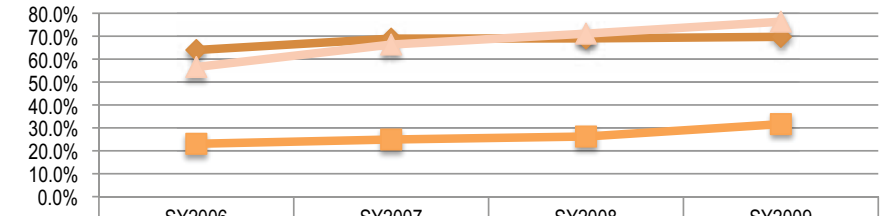
MCAS Math pass rates were highest among tenth graders, among whom 76.3% passed this test in SY2009. The lowest pass rates were found among middle school students. Across all grade levels, MCAS Math pass rates for LEP students were the lowest when compared to all BPS students or to English proficient students (Table 34). Math pass rates improved across all grades, most particularly among elementary school students (Figure 11), although, overall, the improvement was not as salient as experienced in MCAS ELA. Comparing students' performance in SY2009 to performance in SY2006, we found that gaps in pass rates between LEP and EP students decreased across all grade levels but most noticeably in Grade 10 where the gap between EP and LEP students decreased by 10.1 percentage points (Appendix 2).

Table 34. MCAS Math Pass Rates of Students of Different Language Proficiencies. BPS, SY2009

	All BPS	EP	LEP
4th grade	78.0%	79.9%	69.7%
8th grade	58.3%	61.5%	31.6%
10th grade	88.0%	89.7%	76.3%

Notes: Differences in the MCAS Math outcomes between LEP students and students proficient in English are significant for all grade levels (Chi^2, $p<.000$) but the effect sizes are small in all cases.

Figure 11. MCAS Math Pass Rates of LEP Students. BPS, SY2006-SY2009



	SY2006	SY2007	SY2008	SY2009
4th	64.0%	68.9%	69.0%	69.7%
8th	23.1%	24.9%	26.2%	31.6%
10th	56.6%	66.4%	71.1%	76.3%

MCAS Science Pass Rates

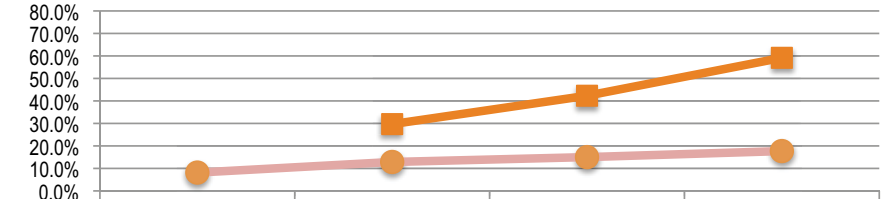
LEP pass rates in Science were highest among tenth graders, but even for this group, only 59.2% of LEP students passed MCAS Science in SY2009. Science pass rates for LEP students at both grade levels were the lowest of all groups considered here (Table 35). But even though MCAS Science scores remained low through the period of study, there was improvement in the scores of LEP students in both eighth and tenth grade (Figure 12). In Grade 10, scores increased by 30 percentage points between SY2007 and SY2009. Comparing students' performance in SY2009 to performance in SY2006, we found that pass rate gaps in Science between EP and LEP students declined slightly in both grades, but that gaps remained wide in both eighth and tenth grade, 36.3 and 23.2 percentage points respectively (Appendix 2).

Table 35. MCAS Science Pass Rates of Students of Different Language Proficiencies. BPS, SY2009

	All BPS	EP	LEP
8th Grade	50.2%	54.0%	17.7%
10th Grade	79.4%	82.4%	59.2%

Notes: Differences in the MCAS Science outcomes between LEP students and students proficient in English are significant for both grade levels (Chi^2, $p<.000$) but the effect sizes are small.

Figure 12. MCAS Science Pass Rates of LEP Students. BPS, SY2006-SY2009



	SY2006	SY2007	SY2008	SY2009
8th	8.1%	12.9%	15.0%	17.7%
10th		29.7%	42.3%	59.2%

IN DEPTH:

Taking English Proficiency into Account…

In the previous section we presented the MCAS results for LEP students that one most frequently sees: an aggregate result for the population of LEP students without regard for their proficiency in English. In this one, we explore a similar comparison between LEP and EP students in Grades 4, 8, and 10, but this time we take English proficiency into account. Table 36presents the results in MCAS ELA, Math, and Science for LEP students at different levels of English proficiency as well as the results for English proficient students in each grade.[3] The expectation is that only the pass rates for LEP students scoring at Level 5 of MEPA should be comparable to those of English proficient students.

Among fourth graders, we observe that both MCAS ELA and Math pass rates were extremely low among students scoring at MEPA Levels 1, 2, and 3, as expected. These pass rates increase as students demonstrate higher levels of English proficiency: LEP students at MEPA Level 5 had pass rates more than 15 percentage points higher than EP students in both Math and ELA.

The same pattern was observed among eighth grade students, among whom MCAS performance in all subjects rose along with English proficiency, as measured by MEPA. Eighth grade LEP students at MEPA Level 5 they slightly out-scored EP students in Math and lagged by very few points in ELA and Science. In Grade 10, those at Level 5 outscored EP students in both ELA and Science but fell slightly behind them in Math. In Grade 10, LEP students scoring at MEPA Level 4 were also close to the outcomes of English proficient students.

Table 36. MCAS ELA, Math, and Science Pass Rates. English Proficient Students and LEP Students[1] at Different Levels of English Proficiency[2]. BPS, SY2009

	ELA[3]	Math[4]	Science[5]
Grade 4			
All LEPs	61.6%	69.7%	N/A
MEPA Level 1	0.0%	23.1%	
MEPA Level 2	8.6%	22.2%	
MEPA Level 3	20.2%	40.6%	
MEPA Level 4	66.9%	75.5%	
MEPA Level 5	94.7%	94.2%	
All EPs	79.9%	79.9%	
Grade 8			
All LEPs	55.6%	31.6%	17.7%
MEPA Level 1	5.6%	3.7%	0%
MEPA Level 2	15.5%	15.2%	4.8%[6]
MEPA Level 3	44.2%	27.1%	13.7%
MEPA Level 4	83.3%	39.6%	20.4%
MEPA Level 5	89.8%	61.7%	48.3%
All EPs	92.2%	61.5%	54.0%
Grade 10			
All LEPs	72.6%	76.3%	59.2%
MEPA Level 1	25.0%	69.2%	23.1%[6]
MEPA Level 2	50.0%	75.0%	41.7%
MEPA Level 3	61.2%	69.7%	52.1%
MEPA Level 4	92.6%	84.7%	75.4%
MEPA Level 5	98.7%	86.7%	84.2%
All EPs	95.2%	89.7%	82.4%

Notes: [1] Includes all LEP students in 4th, 8th and 10th grade who took the MCAS test in SY2009. [2] Includes only those LEP students who had taken MEPA and MCAS in SY2009. [3] The difference in MCAS ELA pass rates between LEP students scoring at MEPA level 5 and EP students is significant among 4th graders (p=.000, minimal effect size); it is not significant among 8th or 10th graders. [4] The difference in MCAS Math pass rates between LEP students scoring at MEPA Level 5 and EP students is significant among 4th graders (p=.000, minimal effect size); it is not significant among 8th or 10th graders. [5] The difference in MCAS Science pass rates between LEP students scoring at MEPA level 5 and EP students is not significant for 8th or 10th graders. [6] Represents less than 10 students.

B What are the MCAS ELA, Math, and Science Outcomes of LEP Students of Different Characteristics?

The pass rates of LEP students in elementary, middle, and high school grades are examined in the light of the students' demographic descriptors. We examine the relationship between MCAS outcomes in ELA, Math, and Science and students' gender, income status, native language, English proficiency, mobility, and disability. In this and the following sections we look at elementary, middle, and high school students in the aggregate (instead of fourth, eighth, and tenth graders) in order for group sizes to be large enough to report on the analyses.

Pass Rates in MCAS ELA, Math, and Science of Elementary School LEP Students

English proficiency, native language, and disability proved to be significant variables in the outcomes in all subjects in the MCAS among elementary school students. As expected, LEP students at MEPA performance Levels 4 and 5 achieved high scores, comparable to those of EP students in both ELA and Math. Among elementary school LEP students of different native languages, native speakers of Chinese languages had the highest pass rates, with native speakers of Cape Verdean Creole having the lowest pass rates in ELA and native speakers of Somali having the lowest pass rates in Math. In Science, Vietnamese speakers had the highest pass rates; native speakers of Portuguese and Somali had the lowest. Across all subjects, the pass rates of LEP students without disabilities were higher than those of LEP-SWDs.

In addition, among elementary LEP students, gender and mobility proved significant in both ELA and Science pass rates. In ELA girls outscored boys and the opposite was true in Science. In all subjects, stable students showed higher pass rates than students who had changed schools.

Table 37. MCAS ELA, Math, and Science Pass Rates of Elementary School EP and LEP Students. BPS, SY2009

	ELA[5]		Math[6]		Science[7]	
	EP	LEP	EP	LEP	EP	LEP
All	84.0%	64.9%	76.3%	61.8%	72.0%	45.1%
Male	79.8%	61.6%	74.8%	61.6%	74.0%	50.9%
Female	88.6%	68.9%	77.9%	62.0%	69.9%	37.8%
Low Income[1]	82.0%	65.0%	73.5%	61.5%	69.0%	45.3%
Not Low Income	91.8%	61.8%	86.5%	66.7%	84.0%	40.0%
Native Language						
Spanish	90.0%	61.2%	84.2%	56.7%	77.3%	38.9%
Cape Verdean Creole	86.2%	53.2%	74.2%	53.8%	84.4%	46.3%
Chinese languages	100%	87.6%	100%	89.7%	97.4%	67.3%
Haitian Creole	89.6%	67.3%	83.5%	61.2%	76.7%	44.4%
Portuguese	93.3%	80.0%	86.7%	67.7%	75.0%	31.3%[8]
Somali	96.6%	56.7%	90.0%	50.0%	75.0%	31.3%[8]
Vietnamese	100%	70.9%	97.3%	82.9%	90.7%	68.4%
Other languages[2]	97.8%	71.7%	93.4%	66.3%	88.1%	64.8%
English Proficiency Level						
MEPA Levels 1 and 2	NA	12.4%	NA	22.4%	NA	13.0%[8]
MEPA Level 3		31.2%		35.2%		20.5%
MEPA Levels 4 and 5		80.6%		75.1%		59.4%
Mobile[3]	76.4%	54.2%	59.7%	53.3%	68.3%	30.0%
Stable	84.5%	65.4%	77.4%	62.3%	72.3%	46.0%
SWD[4]	54.6%	42.3%	47.5%	41.6%	49.3%	32.5%
Not SWD	91.9%	73.6%	84.0%	69.4%	78.2%	50.5%

[1] Percent eligible for free or reduced price lunch; [2] Does not include English; [3] Mobile is defined as a student who changed schools between October and June of a given school year; [4] Percent designated as a student with disabilities. Includes only students ages 6+; [5] Includes grades 4-5. Among LEP students in these grades, the difference in MCAS ELA pass rates was found to be significant in terms of gender (p=.004, minimal effect size), native language (p=.000, small effect size), English proficiency level (p=.000, large effect size), mobility (p=.051, minimal effect size), and disability (p=.000, small effect size); [6] Includes grades 3-5. Among LEP students in these grades, the difference in MCAS Math pass rates was found to be significant in terms of native language (p=.000, small effect size), English proficiency level (p=.000, medium effect size), and disability (p=.000, small effect size); [7] Includes grade 5 only. Among LEP students in grade 5, the difference in MCAS Science pass rates was found to be significant in terms of gender (p=.001, small effect size), native language (p=.000, small effect size), English proficiency level (p=.000, medium effect size), mobility (p=.049, minimal effect size), and disability (p=.000, small effect size); [8] Represents less than 10 students.

Pass Rates in MCAS ELA, Math, and Science of Middle School[4] LEP Students

English proficiency, native language, mobility, and disability were found to be significant in the outcomes in all subjects in the MCAS among middle school students. LEP students at MEPA performance Levels 4 and 5 again achieved high scores across all subjects. Among LEP middle school students of different native languages, Portuguese native speakers had the highest pass rate in ELA and native speakers of Chinese languages had the highest pass rates in Math and Science. In the latter, the outcomes were very low across all groups. Across all subjects, the pass rates of stable students were higher by a very wide margin than those of students who had changed schools in SY2009. Also, across all subjects and by very wide margins, the pass rates of LEP students without disabilities were higher than those of LEP-SWDs.

In addition, gender was significant in the outcomes in MCAS ELA and Science with females performing better in ELA and males better in Science, as was the case in the elementary grades. The income status of students proved significant in the MCAS outcomes in Science in middle school LEP students, with very low income students showing significantly lower pass rates than those who are not of low income.

Pass Rates in MCAS ELA, Math, and Science of High School[5] LEP Students

English proficiency and disability were found to be significant in the outcomes in all subjects in the MCAS among high school students. LEP students at MEPA performance Levels 4 and 5 again showed high scores across all subjects. Across all subjects and by wide margins, the pass rates of LEP students without disabilities were higher than those of LEP-SWDs. In addition, gender was significant in the outcomes in MCAS ELA, with females performing better than males across all grades levels.

Table 38. MCAS ELA, Math, and Science Pass Rates of Middle School EP and LEP Students. BPS, SY2009

	ELA[4]		Math[5]		Science[6]	
	EP	LEP	EP	LEP	EP	LEP
All	90.3%	59.0%	65.6%	37.7%	54.0%	17.7%
Male	87.1%	55.8%	63.2%	38.8%	54.0%	21.1%
Female	93.5%	63.1%	68.0%	36.4%	54.0%	13.5%
Low income[1]	88.9%	59.3%	61.3%	38.1%	47.6%	16.1%
Not Low Income	94.5%	55.0%	78.4%	33.3%	71.4%	31.7%
Native Language						
Spanish	95.0%	58.9%	72.0%	31.0%	50.8%	12.2%
Cape Verdean Creole	93.9%	47.8%	66.7%	30.9%	42.9%	18.8%[7]
Chinese languages	98.8%	83.8%	96.0%	91.3%	86.0%	68.0%
Haitian Creole	94.7%	49.4%	69.7%	29.9%	42.1%	9.8%[7]
Portuguese	94.4%	86.4%	84.6%	52.2%	50.0%[7]	-
Somali	96.8%	26.3%	69.7%	16.2%[7]	47.1%[7]	0%
Vietnamese	96.6%	68.8%	94.3%	77.3%	73.6%	30.0%[7]
Other languages[2]	95.5%	66.3%	85.4%	44.0%	73.6%	30.0%[7]
English Proficiency Level						
MEPA Levels 1 and 2	NA	9.6%	NA	14.2%	NA	3.3%[7]
MEPA Level 3	NA	41.4%	NA	25.3%	NA	13.7%
MEPA Levels 4 and 5	NA	85.1%	NA	56.6%	NA	30.8%
Mobile[3]	80.7%	35.7%	42.6%	19.0%	31.6%	2.5%[7]
Stable	90.8%	60.9%	67.0%	40.1%	55.3%	19.4%
SWD	66.6%	49.1%	28.4%	25.9%	18.0%	6.5%[7]
Not SWD	96.5%	63.1%	75.3%	42.4%	63.1%	21.0%

[1] Percent eligible for free or reduced price lunch; [2] Does not include English; [3] Mobile is defined as a student who changed schools between October and June of a given school year; [4] Includes grades 6-8. Among LEP students in these grades, the difference in MCAS ELA pass rates was found to be significant in terms of gender (p=.004, minimal effect size), native language (p=.000, small effect size), English proficiency level, (p=.000, large effect size), mobility (p=.000, small effect size), and disability (p=.000, small effect size); [5] Includes grades 6-8. Among LEP students in these grades, the difference in MCAS Math pass rates was found to be significant in terms of native language (p=.000, medium effect size), English proficiency level (p=.000, medium effect size), mobility (p=.000, small effect size) and disability (p=.000, small effect size); [6] Includes grade 8 only. Among LEP students in grade 8, the difference in MCAS Science pass rates was found to be significant in terms of gender (p=.048, minimal effect size), income (p=.013, small effect size), native language (p=.000, medium effect size), English proficiency level (p=.000, small effect size), mobility (p=.008, small effect size), and disability (p=.001, small effect size); [7] Represents less than 10 students.

Table 39. MCAS ELA, Math, and Science Pass Rates of High School EP and LEP Students. BPS, SY2009

	ELA[4]		Math[5]		Science[6]	
	EP	LEP	EP	LEP	EP	LEP
All	95.2%	72.6%	89.7%	76.3%	82.4%	59.2%
Male	93.4%	68.8%	87.8%	79.1%	81.3%	61.3%
Female	97.0%	76.7%	91.7%	73.3%	83.4%	57.0%
Low Income[1]	94.9%	73.0%	88.8%	76.8%	79.9%	60.6%
Not Low Income	95.8%	70.6%	91.5%	73.6%	87.0%	50.7%
Native Language[2]						
Spanish	96.6%	67.6%	93.9%	71.1%	85.2%	51.0%
Cape Verdean Creole	90.2%	75.4%	86.2%	81.3%	76.2%	61.9%
Chinese languages	100%	85.7%	99.3%	94.6%	99.3%	78.9%
Haitian Creole	97.3%	77.4%	84.0%	74.5%	85.9%	56.4%
Portuguese	100%	-	94.1%	-	76.5%	-
Somali	-	37.5%[7]	-	26.7%[7]	-	40.0%[7]
Vietnamese	100%	93.5%	100%	100%	94.9%	93.3%
Other languages	98.7%	69.6%	96.1%	82.8%	93.5%	66.7%
English Proficiency Level						
MEPA Levels 1 and 2	NA	44.6%	NA	73.7%	NA	37.7%
MEPA Level 3	NA	61.2%	NA	69.7%	NA	52.1%
MEPA Levels 4 and 5	NA	94.9%	NA	85.5%	NA	78.9%
Mobile[3]	86.8%	72.2%	74.1%	80.0%	58.1%	65.3%
Stable	95.7%	72.7%	90.7%	75.9%	83.8%	58.5%
SWD	78.0%	55.7%	67.5%	56.5%	53.8%	37.5%
Not SWD	98.2%	75.1%	93.6%	79.2%	87.5%	62.3%

[1] Percent eligible for free/reduced lunch; [2] Does not include English. [3] Mobile is defined as a student who changed schools between October and June of a given school year; [4] Among LEP students in High School (Grade 10), the difference in MCAS ELA pass rates was found to be significant in terms of gender (p=.051, minimal effect size), English proficiency level (p=.000, medium effect size), and disability (p=.002, small effect size); [5] Among LEP students in High School (Grade 10), the difference in MCAS Math pass rates was found to be significant in terms of English proficiency level (p=.001, small effect size) and disability (p=.000, small effect size); [6] Among LEP students in High School (Grade 10), the difference in MCAS Science pass rates was found to be significant in terms of English proficiency level (p=.000, medium effect size) and disability (p=.000, small effect size); [7] Represents less than 10 students.

IN DEPTH:

Attendance Rates of MCAS Test-Takers and Their MCAS Outcomes

The relationship between student attendance and their academic achievement is a frequent theme explored by educational researchers. Our findings, contained in Table 40, show that Boston LEP students who passed MCAS had higher attendance rates that those who did not. This was true at all grade levels and on all subjects and the differences were statistically significant. In addition, among those who passed MCAS, at all grade levels and on all subjects, LEP students had higher attendance rates than EPs. These differences are also statistically significant.

Table 40. Median Attendance Rate of MCAS Test-takers, EP and LEP Students. BPS, SY2009

MCAS Test-takers	EP: Median Attendance Rate		LEP: Median Attendance Rate	
	Did Not Pass MCAS ELA	Passed MCAS ELA	Did Not Pass MCAS ELA	Passed MCAS ELA
Elementary School test-takers[1]	94.4%	96.1%	96.1%	97.2%
Middle School test-takers[2]	92.2%	95.4%	94.4%	96.1%
High School test-takers[3]	85.8%	93.9%	90.6%	95.0%
	Did Not Pass MCAS Math	Passed MCAS Math	Did Not Pass MCAS Math	Passed MCAS Math
Elementary School test-takers[1]	94.4%	96.1%	96.1%	97.2%
Middle School test-takers[2]	92.7%	96.1%	94.4%	96.7%
High School test-takers[3]	85.6%	93.9%	90.6%	95.5%
	Did Not Pass MCAS Science	Passed MCAS Science	Did Not Pass MCAS Science	Passed MCAS Science
Elementary School test-takers[1]	95.0%	96.1%	96.1%	97.2%
Middle School test-takers[2]	92.8%	96.1%	94.4%	97.8%
High School test-takers[3]	86.1%	93.9%	90.6%	96.1%

[1] Differences in median attendance between elementary school LEP test-takers who passed and did not pass MCAS tests were statistically significant in regards to ELA (p<.000), Math (p<.000) and Science (p=.006) tests. [2] Differences in median attendance between middle school LEP test-takers who passed and did not pass MCAS ELA, Math and Science were statistically significant (p<.000 in all cases).
[3] Differences in median attendance between high school LEP test-takers who passed and did not pass MCAS ELA, Math and Science were statistically significant (p<.000 in all cases).

C What Are the ELA and Math Pass Rates of English Language Learners in Schools with Different Characteristics?

Elementary MCAS ELA and Math Pass Rates in Schools with Different Characteristics

The differences in ELA pass rates among LEP students in schools with different characteristics are significant in relation to the poverty rate of schools, accountability status, and teacher qualifications. Table 41 shows that LEP students have higher pass rates in ELA when they are enrolled in elementary schools:

- with lower poverty rates;
- that had met AYP goals in Math and ELA;
- that had a proportion of licensed teachers higher than the district; and,
- that had lower proportions of courses taught by highly qualified teachers than the district's average.

The density of LEP students, the school's accountability status, and the proportion of courses taught by highly qualified teachers are significant in the differences of Math pass rates of LEP students. For LEP students, Math pass rates are higher in elementary schools that have higher densities of LEP students and in elementary schools with lower pro-

Table 41. Elementary School MCAS Pass Rates of LEP Students in Schools with Different Characteristics. BPS, SY2009

	LEP MCAS Pass Rates	
	ELA[3]	Math[4]
EP	84.0%	76.3%
All LEP	64.9%	61.8%
School Size		
Large	62.6%	61.9%
Medium	63.3%	60.4%
Small	69.3%	63.5%
Poverty Rate		
Poverty rate 25-75%	74.8%	66.1%
Poverty rate >75%	64.0%	61.4%
LEP Density		
0-10%	65.9%	55.7%
10.1-30%	68.8%	64.1%
30.1-50%	63.2%	59.3%
>50%	63.9%	67.0%
Accountability Status[1]		
Met AYP in ELA	74.0%	68.2%
Did not meet AYP in ELA	60.9%	59.0%
Met AYP in Math	75.5%	71.2%
Did not meet AYP in Math	63.7%	60.8%
Teacher Qualifications[2]		
% of teachers licensed in teaching assignment, above district average (>97.9%)	66.7%	61.8%
% of teachers licensed in teaching assignment, at or below district average (<=97.9%)	60.6%	61.7%
% of core academic classes taught by highly qualified teachers, above district average (>95.9%)	62.9%	59.7%
% of core academic classes taught by highly qualified teachers, at or below district average (<=95.9%)	73.7%	71.6%

[1] AYP data for BPS schools is from MDESE (n.d. a). [2] The data on teacher qualifications comes from MDESE (n.d. b) and represents the average for the district as a whole, and not the average for the specific grade level. [3] Chi^2 is significant when assessing the differences in ELA pass rates among LEP students in relationship to schools' poverty rate (p=.026, minimal effect size), accountability status (p<.000 for ELA and p=.005 for math, small and minimal effect size respectively), the proportion of teachers licensed in teaching assignment (p=.027, minimal effect size), and proportion of courses taught by HQT (p=.001, minimal effect size). [4] Chi^2 is significant when assessing the differences in Math pass rates among LEP students in relationship to the LEP density (p=.041, minimal effect size) accountability status (p<.001 for ELA and p=.016 for math, minimal effect size), and the proportion of courses taught by HQT (p<.000, minimal effect size).

portions of core academic courses taught by highly qualified teachers than is prevalent in the district.

Middle School ELA and Math Pass Rates in Schools of Different Characteristics

The differences in ELA pass rates among LEP students in different types of schools are statistically significant in relation to the size, poverty rate, and LEP density of the schools, and to their accountability status. LEP students' middle school ELA pass rates are higher when they are enrolled:

- in large middle schools;
- in schools with lower poverty rates;
- in schools with a high LEP density; and,
- in schools that met AYP goals in ELA.

Differences in Math pass rates among LEP students are significant in regard to school size, school poverty rate, the density of LEP students, the school's accountability status, the proportion of teachers licensed in teaching assignment, and the proportion of courses taught by highly qualified teachers. LEP students showed higher MCAS Math pass rates when they were enrolled in large middle schools, in schools with lower poverty rates, in schools that met AYP goals in ELA and Math, and in schools with teacher qualifications at or below the district average.

Table 42. Middle School MCAS Pass Rates of LEP Students in Schools with Different Characteristics. BPS, SY2009

	LEP MCAS Pass Rates	
	ELA[3]	Math[4]
EP	90.3%	65.6%
All LEP	59.0%	37.3%
School Size		
Large	100%	100%
Medium	56.9%	32.7%
Small	61.7%	45.4%
Poverty Rate		
Poverty rate 25-75%	86.4%	67.6%
Poverty rate >75%	57.7%	36.4%
LEP Density		
0-10%	67.0%	48.9%
10.1-30%	59.3%	41.0%
30.1-50%	54.6%	25.7%
>50%	78.3%	43.5%
Accountability Status[1]		
Met AYP in ELA	68.0%	49.3%
Did not meet AYP in ELA	56.2%	34.2%
Met AYP in Math	62.6%	55.6%
Did not meet AYP in Math	58.3%	34.5%
Teacher Qualifications[2]		
% of teachers licensed in teaching assignment, above district average (>97.9%)	61.4%	34.9%
% of teachers licensed in teaching assignment, at or below district average (<=97.9%)	56.7%	40.4%
% of core academic classes taught by highly qualified teachers, above district average (>95.9%)	58.1%	35.1%
% of core academic classes taught by highly qualified teachers, at or below district average (<=95.9%)	59.7%	40.6%

[1] AYP data for BPS schools are from MDESE (n.d. a). [2] The data on teacher qualifications come from MDESE (n.d b) and represent the average for the district as a whole, not the average for the specific grade level. [3] Chi^2 is significant when assessing the differences in ELA pass rates among LEP students in relationship to school size (p=.004, minimal effect size), school poverty rate (p<.000, small effect size), LEP density (30.1-50%, p=.053, minimal effect size), and accountability status (p<.000, small effect size for ELA AYP).
[4] Chi^2 is significant when assessing the differences in Math pass rates among LEP students in relationship to school size (p<.000, small effect size), school poverty rate (p<.000, small effect size), LEP density (0-10%, p=.053, minimal effect size; 10.1-30%, p=.000, minimal effect size and 30.1-50%, p=.000, minimal effect size), accountability status (p<.000, small effect size for ELA AYP; p<.000, small effect size for Math AYP), licensed teachers in assignment (p=.024, minimal effect size), and core courses taught by HQT (p=.044, minimal effect size).

High School ELA and Math Pass Rates in Schools of Different Characteristics

The differences in ELA pass rates among LEP students in high schools of different characteristics are significant in relation to the type and the size of the school, its poverty rate, its LEP density, and teachers' qualifications. Table 43 shows that LEP students in high school had higher pass rates in ELA when they were enrolled in high schools:

- that are small;
- that have lower poverty rates;
- that have a lower LEP density; and,
- that have a higher proportion of teachers licensed in their teaching assignment than the district average.

The differences in Math pass rates among high school LEP students are significant in relation to the size of the school, the LEP density of the schools, the accountability status, and teachers' qualifications. LEP students in high school have higher pass rates in Math when they are enrolled in high schools that are small, in schools where the poverty rate is high, in schools where the LEP density is high, in schools that met AYP goals in Math, and in schools where the proportion of teachers licensed in their teaching assignment is higher than the district average.

Table 43. High School MCAS Pass Rates of LEP Students in Schools with Different Characteristics. BPS, SY2009

	LEP MCAS Pass Rates	
	ELA[3]	Math[4]
EP	95.2%	89.7%
All LEP	72.6%	76.3%
School Size		
Large	73.3%	71.6%
Medium	58.2%	73.1%
Small	78.7%	84.4%
Poverty Rate		
Poverty rate 25-75%	73.9%	77.1%
Poverty rate >75%	71.4%	75.5%
LEP Density		
0-10%	89.2%	77.5%
10.1-30%	72.1%	75.5%
30.1-50%	77.3%	55.0%
>50%	63.0%	88.9%
Accountability Status[1]		
Met AYP in ELA	72.7%	80.0%
Did not meet AYP in ELA	72.5%	74.0%
Met AYP in Math	89.1%	93.9%
Did not meet AYP in Math	68.8%	72.1%
Teacher Qualifications[2]		
% of teachers licensed in teaching assignment, above district average (>97.9%)	79.7%	85.6%
% of teachers licensed in teaching assignment, at or below district average (<=97.9%)	66.7%	68.3%
% of core academic classes taught by highly qualified teachers, above district average (>95.9%)	74.3%	72.8%
% of core academic classes taught by highly qualified teachers, at or below district average (<=95.9%)	69.3%	79.4%

[1] AYP data for BPS schools is from MDESE (n.d. a); [2] The data on teacher qualifications is from MDESE (n.d. b) and represents the average for the district as a whole, and not the average for the specific grade level. [4] Chi^2 is significant when assessing the differences in ELA pass rates in relationship to LEP density (0-10%/>10%, p=.019, small effect size), and the proportion of teachers licensed in assignment (p=.001, small effect size). [5] Chi^2 is significant when assessing the differences in Math pass rates among LEP students in relationship to school size (p=.015, small effect size), LEP density (30.1-50%/all others, p=.022 with small effect size and >50.1%/<=50% p=.021, small effect size), accountability status (p<.000 with small effect size for Math AYP), and licensed teachers in assignment (p=.044, minimal effect size).

D What are the MCAS ELA and Math Pass Rates of English Language Learners at MEPA Performance Levels 4 and 5 in Different Types of Programs?

Tables 44 to 46 present the ELA and Math MCAS outcomes for elementary, middle and high school LEP students at MEPA performance Levels 4 and 5. As we discussed in Chapter V and in the introduction to the current chapter, the MCAS is not an appropriate measure of the knowledge of academic content for LEP students scoring at MEPA performance Levels 1, 2, and 3 because these students do not have the English proficiency necessary to fully understand the content of the exam. In this section, we review the outcomes of LEP students in different types of programs. ELA, Math, and Science pass rates for LEP students at all MEPA performance levels and all grade levels appear in Appendix 2.

LEP Students Scoring at MEPA Performance Levels 4 and 5 in Elementary Grades. For these students, there is strong evidence that Two-Way Bilingual programs work best. In both ELA and Math, students in Two-Way Bilingual programs outperform students in any other ELL program as well as English proficient students. There are only three Two-Way bilingual programs in BPS; all three are English/Spanish programs. Between the two types of SEI programs, ELA pass rates were higher among Language Specific programs. Only the differences between the outcomes in MCAS ELA and Math of students in SEI and Two-Way Bilingual and those not in ELL programs were statistically significant.

LEP students in general education programs in elementary grades scoring at MEPA Levels 4 and 5 showed slightly higher scores on both ELA and Math than students in the aggregate of ELL programs. Students not in ELL programs outscored English proficient students in Math. Only the differences between the Math pass rates of students in ELL and not in ELL programs were found to be significant.

Table 44. MCAS ELA and Math Pass Rates of LEP Students at MEPA Levels 4 & 5 in Different Types of Elementary School ELL Programs. BPS, SY2009

	Pass Rate	LEP MEPA Test-takers at Levels 4 & 5	
Elementary School ELA[1]			
Pass rate of English proficient	84.0%		
		N	Percent
LEP	64.9%	986	80.6%
LEP Not in an ELL Program	70.6%	535	82.6%
In ELL Program	59.0%	451	78.3%
In SEI	58.6%	397	76.6%
In SEI Multilingual	52.6%	15	66.7%
In SEI Language Specific	58.8%	382	77.0%
In Two-Way Bilingual	81.4%	48	91.7%
In SIFE	29.7%	-	-
Elementary School Math[2]			
Pass rate of English proficient	76.3%		
LEP	61.8%	988	75.1%
LEP Not in an ELL Program	67.2%	534	78.5%
In ELL Program	56.5%	454	71.1%
In SEI	55.2%	400	69.5%
In SEI Multilingual	52.2%	15	-
In SEI Language Specific	55.3%	385	70.1%
In Two-Way Bilingual	74.6%	48	83.3%
In SIFE	50.0%	6	-

Note: [1] Includes Grades 4-5. Among LEP students scoring at MEPA levels 4 & 5 enrolled in different ELL programs, Chi^2 is only significant when testing for the difference in MCAS ELA pass rates between those in SEI /not in ELL program and between those in SEI/Two-Way Bilingual programs (p=.022 and .017, respectively, with small effect size). [2] Includes Grades 3-5. Among LEP students scoring at MEPA levels 4 & 5 enrolled in different ELLprograms, Chi^2 is only significant when testing for the difference in MCAS Math pass rates between those in ELL/not in ELL program, SEI/not in ELL program and SEI/2way (p=.008, .002 and .046, respectively, with minimal effect size).

LEP Students at MEPA Performance Levels 4 and 5 in Middle School Grades. Students in Two-Way Bilingual programs show a stronger performance in ELA than English proficient students and students in all other programs for ELLs. In Math, students in Multilingual SEI programs outscored English proficient students; among programs both Two Way Bilingual and SEI Multilingual programs outscored all others. Although for reasons of confidentiality we cannot show the actual pass rates for students in the two TBE programs, they were also high. Only the differences in Math pass rates between LEP students in SEI and TBE were found to be significant.

Comparisons of all students in ELL programs and those not in ELL programs show that the latter slightly outscored the former in ELA and Math. This is because of the low pass rates of the large group of students in SEI Language Specific programs.

Table 45. MCAS ELA and Math Pass Rates of LEP Students at MEPA Levels 4 & 5 in Different Types of Middle School ELL Programs. BPS, SY2009

	Pass Rate	LEP MEPA Test-takers at Levels 4 & 5	
Middle School ELA[1]			
Pass rate of English proficient	90.3%		
		N	**Percent**
LEP	59.0%	751	85.1%
LEP Not in an ELL Program	69.7%	472	85.6%
In ELL Program	47.8%	279	84.2%
In SEI	48.0%	241	82.6%
In SEI Multilingual	69.0%	21	85.7%
In SEI Language Specific	46.5%	220	82.3%
In Two-Way Bilingual	89.3%	27	92.6%
In TBE[2]	84.0%	-	-
In SIFE	7.5% [3]	-	-
Middle School Math[4]			
Pass rate of English proficient	65.5%		
LEP	37.7%	751	56.6%
LEP Not in an ELL Program	45.9%	473	57.7%
In ELL Program	30.3%	278	54.7%
In SEI	29.4%	241	52.7%
In SEI Multilingual	38.8%	21	66.7%
In SEI Language Specific	28.7%	220	51.4%
In Two-Way Bilingual	59.3%	26	61.5%
In TBE[2]	92.3%	8	-
In SIFE	1.6%[3]	3	-

Note: [1] Includes Grades 6-8. Among LEP students scoring at MEPA levels 4 & 5, Chi^2 is not significant when testing for the difference in MCAS ELA pass rates among students enrolled in different types of ELL programs. [2] The ELA pass rate for TBE students at MEPA level 3 is 91.7%. The Math pass rate for TBE students at MEPA level 3 is 100%. [3] Represents less than 10 students. [4] Includes Grades 6-8. Among LEP students scoring at MEPA levels 4 & 5, Chi^2 is only significant when testing for the difference in MCAS Math pass rates between those in SEI and vs. those in TBE (p=.008, small effect size).

LEP Students at MEPA Performance Levels 4 and 5 in High School Grades. Among high school LEP students, students in SEI Language Specific programs outperformed students in all other ELL programs, and also English proficient students in ELA. In Math, both Multilingual SEI programs and TBE programs show a high pass rate, but the numbers of students tested are low (23 and 10, respectively). The differences between the Math pass rates of students in SEI Multilingual and TBE programs were statistically significant. Overall, the Math pass rates of high school LEP students at MEPA Levels 4 and 5 in ELL programs compare well with English proficient students.

Among high school LEP students, ELA pass rates of students in ELL programs are higher than those of students not in ELL programs.

Table 46. MCAS ELA and Math Pass Rates of LEP Students at MEPA Levels 4 & 5 in Different Types of High School ELL Programs. BPS, SY2009

	Pass Rate	LEP MEPA Test-takers at Levels 4 & 5	
High School ELA[1]			
Pass rate of English proficient	95.2%		
		N	Percent
LEP	72.6%	198	94.9%
LEP Not in an ELL Program	75.0	57	94.7%
In ELL Program	71.9%	141	95.0%
In SEI	72.4%	131	95.4%
In SEI Multilingual	66.7%	23	94.0%
In SEI Language Specific	73.9%	108	95.7%
In TBE	93.5%	10	90.0%
In SIFE	18.8%[2]	0	-
High School Math[3]			
Pass rate of English proficient	89.7%		
LEP	76.3%	193	85.5%
LEP Not in an ELL Program	69.1%	55	78.2%
In ELL Program	78.7%	138	88.4%
In SEI	79.2%	128	87.5%
In SEI Multilingual	91.2%	23	100%
In SEI Language Specific	76.1%	105	84.8%
In TBE	100%	10	100%
In SIFE	15.4%[2]	0	-

Note: [1] Includes Grade 10. Among LEP students scoring at MEPA levels 4 & 5, Chi^2 is not significant when testing for the difference in MCAS ELA pass rates among students enrolled in different types of ELL programs. [2] Represents less than 10 students. [3] Includes Grade 10. Among LEP students scoring at MEPA levels 4 & 5, Chi^2 is only significant when testing for the difference in MCAS Math pass rates between those in SEI Multilingual and those in SEI Language Specific programs (p=.045, small effect size).

IN DEPTH:

Using Hierarchical Linear Modeling (HLM) to Determine the Relative Importance of Individual- and School-Level Factors in LEP Students' ELA and Math MCAS Outcomes

This study has identified significant differences in student achievement among LEP students of different demographic backgrounds, in schools of different characteristics, and in different types of programs. Summarizing the individual factors that proved to be significant, we found that English proficiency and disability were significant in MCAS ELA pass rates at all grade spans. Mobility was significant in the MCAS ELA pass rates of elementary and middle school students and in the Math pass rates of middle schoolers. Gender proved significant in the MCAS pass rates of LEP students at the elementary and high school levels. We found that although there were apparent differences between students in ELL and not in ELL programs, this difference proved significant only in the MCAS Math pass rates of elementary school students. In terms of school factors, we found that the percentage of LEP students in a school was significant in the outcomes in all subjects and grade levels except elementary MCAS ELA pass rates. AYP also proved significant in the outcomes of all subjects and grades except high school ELA pass rates. Poverty status, size, and the proportion of teachers licensed in their teaching assignment were broadly significant.[6]

In order to further investigate the impact of these factors among LEP students in BPS, additional analysis was undertaken to explore the impact of both student-level characteristics and school environments on individual achievement. The primary goal of this analysis was to identify the individual and school environment characteristics that have the greatest impact on LEP students' academic achievement. We accomplished this by examining individual attainment of LEP students as measured by MCAS scores in conjunction with a set of student-level and school environment characteristics that were significant in our descriptive analysis. This analysis included all LEP students in Grades 3-12 who had scores for either MCAS ELA or MCAS Math. Although some other analyses in this report were restricted to students performing at MEPA Levels 4 and 5, this analysis included LEP students at all levels of English proficiency in order to capture the impact of English attainment on academic outcomes.

One of the key challenges in analyzing educational outcomes is that student outcomes are influenced not only by the student's individual demographic background and educational experience such as program enrollment (individual-level), but are also affected by school environmental factors, such as the size of the school (school-level). This means that there are multiple levels of analysis (in this case, individual-level and school-level factors) that must be taken into account in order to obtain accurate results. Hierarchical Linear Modeling (HLM) is a form of multi-level analysis frequently used in educational research to account for the correlations that occur when individual students have similar educational experiences. Using HLM allows us to disaggregate the results and examine the effects that different types of factors, such as individual- and school-level characteristics, have on student outcomes, thereby providing a more accurate analysis of students' experiences (Bryk & Raudenbush, 1992).

In order to confirm that multi-level modeling is appropriate for the analysis of LEP students' outcomes, we calculated the intraclass correlation coefficient to determine whether school characteristics play an important role in determining individual students' academic achievement. This analysis examines individual students' MCAS scores while taking into account the

school that they attend; if students in different schools demonstrate significant differences in MCAS scores ("between-school variance"), it indicates that school-level factors have a significant impact on individual students' scores. If less than 10% of the variation in scores occurs at the school level, another type of analysis would be more appropriate. Table 47 displays the amount of variation in students' scores that occurs between students in comparison to the variation in scores that occurs between schools.

Table 47. Variation in MCAS Scores, 2-level Model. BPS, SY2009

	Variable Level	Percent of Explained Variation	
		ELA	Math
Elementary School	Student	84.3%	88.1%
	School	15.8%	11.9%
Middle School	Student	76.7%	78.6%
	School	23.3%	21.4%
High School	Student	56.8%	70.9%
	School	43.2%	29.2%

Since variation that occurs due to school-level factors accounts for a significant amount of variation in individual outcomes (over 10% at every level of schooling), multi-level modeling is appropriate for this analysis. Interestingly, variation between schools increases as the school level increases. In other words, although individual student factors were more important in explaining the variation in LEP student academic achievement overall, school factors become more important as school level increases in both subjects. School factors represent 16% of the variation in MCAS ELA scores in elementary school, increasing to nearly half of the variation in high school (43%); in MCAS Math scores school factors represent 12% of the variation in elementary school, increasing to 29% of the variation in high school.

Once we determined that multi-level modeling was appropriate for this analysis, we developed a two-level hierarchical linear model examining LEP students' educational attainment outcomes (as measured by MCAS ELA and Math scores) in conjunction with individual-level and school-level characteristics. Again, all LEP students in Grades 3-12 who had MCAS scores in the appropriate subject were included in this analysis. At the individual level, the variable set included gender, attendance rate, English proficiency as measured by the student's MEPA score, special education (SPED) placement, and ELL program participation. The primary advantage of a two-level model in which ELL program participation is an individual-level variable is that it enables us to compare the academic achievement of LEP students in ELL programs to that of LEP students not in ELL programs. The set of variables representing the school environment included meeting Adequate Yearly Progress (AYP) goals in either ELA or Math as appropriate, the percentage of the school population that is low-income, the school size (small, medium, or large), and the percentage of the school population that is of limited English proficiency (LEP). Although mobility was found to be significant in the descriptive analysis at both the student and school levels, it was not part of this analysis because of the high correlation between mobility and attendance at the student level and between mobility and the percentage of the school population that is LEP (LEP density) at the school level. In this type of analysis, high levels of correlation mean that only one of the correlated variables could be used; for this analysis, attendance rate was included at the student level and LEP density was

included at the school level. In addition, the percentage of core academic classes taught by highly qualified teachers was not included in this analysis due to the structure of the variable, which made it unusable for this type of analysis.

For more detailed information about model development and variable selection, please see Appendix 1: Methods and Appendix 4: Additional HLM Results.

Key Results

The results of the HLM analysis support the findings of the descriptive analysis presented in this report and in other academic research. First of all it underscores the importance of language proficiency as a key factor in the achievement of LEP students in Boston. There was a positive relationship between MEPA scores and MCAS scores in both ELA and Math. This means that as a student's level of English proficiency increases, his or her MCAS scores in both English and Math also tend to increase. In fact, MEPA scores were the single most important indicator of achievement on MCAS testing among the variables included in this analysis. This relationship was statistically significant at all three levels of schooling and across both subject areas.

The other key result of the analysis is the relationship between SPED placement and educational attainment. SPED placement was the second most important indicator of achievement on MCAS testing among the variables included in this analysis. This relationship was significant at all three levels of schooling in MCAS Math, and in elementary and middle school in MCAS ELA, with LEP students in special education programs tending to have lower MCAS scores than LEP students who are not. SPED placement was the second most important indicator of achievement on MCAS testing among the variables included in this analysis. It is important to remember that this analysis does not establish causation, only a relationship. In other words, the reason for the students' lower performance is not known; the lower academic performance could be related to a variety of factors, including, but not limited to, the appropriateness of the placement, the quality of the programming available, or an underlying medical condition. However, this finding is important in light of the results of the descriptive analysis of enrollment that documented a significant increase in assigning LEP students to SPED programs without a clear indication that appropriate assessments were conducted to motivate the transfers.

In terms of program participation, the HLM analysis supports the descriptive findings that there is not a consistent difference between the academic achievements of LEP students in ELL programs in comparison to LEP students who are not in ELL programs. In ELA testing there was no significant difference between LEP students in ELL programs and those not in ELL programs at any level of schooling. This was also true in MCAS Math testing in middle school and in elementary school SEI programs. However, as described earlier, LEP students in ELL programs outperformed LEP students not in ELL programs in high school on MCAS Math testing, as did LEP students in non-SEI ELL programs (e.g., Two-Way Bilingual and SIFE) in elementary school.

Results: English Language Arts

In addition to the results above, the two other variables representing individual characteristics, attendance rate and gender, demonstrated a statistically significant relationship with MCAS ELA scores at the high school level.[7] There is a positive relationship between attendance rate and MCAS ELA scores, with scores tending to increase as attendance increases. The relationship between gender and ELA achievement is also significant, with female students tending to perform better on MCAS ELA tests than male students.

Of the four variables representing school environment, only two demonstrated a statistically significant relationship with ELA achievement: Adequate Yearly Progress (AYP) in ELA and the percentage of the school's population that is low-income. Elementary and middle school LEP students who attend schools that have demonstrated AYP in ELA have higher MCAS ELA scores on average than LEP students who attend schools that have not demonstrated AYP in ELA.[8] In middle school, as the proportion of low-income students at a school increases, MCAS scores in ELA tend to decrease.[9]

The remaining two variables representing school environment – school size and the percentage of a given school's population that consists of LEP students – did not have a statistically significant relationship with MCAS ELA scores at any level of schooling.

Results: Math

In addition to the results presented in the previous sections, the other two variables representing individual characteristics – attendance rate and gender – also show statistically significant relationships with math attainment at all schooling levels. The relationship between attendance and MCAS Math scores is positive, with students with higher attendance rates tending to demonstrate higher levels of math attainment. The relationship between gender and math attainment indicates that males tend to perform better than females on MCAS Math testing at all levels of schooling.

Among the four variables that represent school environment, only AYP in Math demonstrates a statistically significant relationship with MCAS Math scores. The relationship is positive, with students attending schools that have demonstrated AYP in Math tending to achieve higher MCAS Math scores than students who attend schools that have not.

There is no statistically significant relationship between MCAS Math outcomes and the percentage of the school population that is made up of low-income students, the size of the school, or the percentage of the school population that is made up of LEP students.

In Sum

In this section we explored the MCAS outcomes of LEP students and the relationships of various factors to those outcomes. Assessing the pass rates of all LEP students, between SY2006-SY2009, we found that there is evidence that there have been strong gains in academic achievement as measured by the MCAS across all areas. ELA, Math and Science Pass Rates have risen at every grade level without exception and gaps between LEP and EP students have declined. But in spite of this advance, the pass rates remain very low and the gaps remain wide.

Taking language proficiency into account shows that, as expected, MCAS scores are very low among students scoring at MEPA performance levels 1 through 3. Once MEPA Level 5 is reached the outcomes of LEP students out-strip those of EP students across all subjects in Grade 4, in Math in Grade 8, and in ELA and Science in Grade 10 and in those subjects in which EP students outscore LEP students, the gaps remain below 6 percentage points.

Significant differences in student achievement among LEP students of different demographic characteristics, in schools of different characteristics and in different types of programs were found.

- With respect to the individual factors that proved to be significant, we found that English proficiency and disability were significant in MCAS ELA pass rates at all grade spans. Mobility was significant in the MCAS ELA pass rates of elementary and middle school students and in the Math pass rates of middle schoolers. Gender proved significant in the MCAS pass rates of LEP students at the elementary and high school levels. Significant differences in the attendance rates of LEP students who passed/did not pass MCAS tests in all areas were also found, where those who passed MCAS showing higher attendance rates than those who did not.
- Although there were apparent differences between students in ELL and not in ELL programs, this difference proved significant only in the MCAS Math pass rates of elementary school students.
- The proportion of LEPs in a school was significant with respect to LEP students' outcomes in all subjects and grade levels except elementary MCAS ELA pass rates. AYP also proved significant in the outcomes of all subjects and grades except high school ELA pass rates. Poverty status, size and the proportion of teachers licensed in their teaching assignment were broadly significant.

Regression analysis supported the findings that language proficiency and designation as a student with disabilities were important in explaining the variation in the ELA and Math MCAS scores of LEP in all grade spans. In its analysis of the relative importance of individual and school factors in the variation of pass rates of LEP students, we found that (1) across grade spans and subjects, individual student factors were more important in explaining the variation in LEP student academic achievement but that (2) program and school factors become more important in explaining this variation as grade level increases.

[1] Massachusetts meets the requirements of Chapter 386 and No Child Left Behind for the assessment of the English proficiency of LEP students in Grades 2 through 12 with the Massachusetts English Proficiency Assessment (MEPA), which was discussed in Chapter V of this report (Massachusetts Department of Education, 2008b).

[2] De Jong, Gort, and Cobb (2005, p. 598) report that in SY2003, the year prior to the implementation of Question 2, the best performance for ELLs statewide was in 3rd grade reading, where 70% passes MCAS ELA and the worst performance was in eighth grade MCAS Math, where the pass rate was only 30%.

[3] The table reports on those students who took both the MEPA test AND the MCAS test in the specific content area. Appendix 2 presents the comparison of the N of students in grades at each grade level, the MCAS test-takers, the MEPA test-takers and the MCAS AND MEPA test-takers in SY2009.

[4] In order to show MCAS pass rates of various categories of LEP students (by ELL program type, English proficiency level, etc.) we report on middle school test-takers henceforth in this chapter. Numbers of test-takers were too small to reliably present MCAS pass rates for eighth grade test-takers alone or to maintain student confidentiality. The exception to this is MCAS Science pass rates, as this subject is only tested in eighth grade at the middle school level.

[5] High school here includes tenth graders only.

[6] These findings are reflective of the findings of other researchers reviewed at the start of this chapter: language proficiency (Dawson & Williams, 2008; Hao & Bonstead-Bruns, 1998; Wang et al., 2007); designation as a student with disabilities (Wang et al., 2007). Along school-level variables, our findings agree with those researchers who have found significance in the school size (Lee & Bryk, 1989; Lee & Smith, 1999; Rumberger & Palardy, 2005; Wang et al., 2007; Werblow & Duesbery, 2009), school poverty level (Braun et al., 2006; Hao & Bonstead-Bruns, 1998; Lee & Smith, 1999; Werblow & Duesbery, 2009), LEP density (Werblow & Duesbery, 2009), proportion of mobile students (Rumberger & Palardy, 2005; Rumberger& Thomas, 2000); and the percentage of teachers who are highly qualified/percentage of teachers who are licensed in their subject (Braun et al. 2006; Munoz & Chang, 2008; Rumberger & Palardy, 2005; Rumberger& Thomas, 2000).

[7] Neither attendance rate nor gender demonstrates a statistically significant relationship with ELA achievement at either the elementary or middle school level.

[8] The relationship between AYP and MCAS ELA scores is not statistically significant at the high school level.

[9] The relationship between the proportion of low-income students at a school and MCAS ELA is not statistically significant at either the elementary or high school level.

CHAPTER

IX.

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS TO THE DISTRICT

A Overall Findings and General Recommendations

This encompassing review of enrollment and outcomes of ELLs in Boston leads to several overarching conclusions that emerge from the data. These focus on key issues and decisions for the Boston Public Schools and relate to key issues in the areas of enrollment and program assignment, Learning English and ELL programs, vulnerable ELL groups, and dropping out.

Enrollment in ELL Programs

Although the enrollment of students of limited English proficiency in Boston Public Schools grew by 12.3% between SY2006 and SY2009, enrollment in programs for English language learners in Boston declined by 23.6%. The bulk of this decline took place between SY2006 and SY2007, when 2,536 students in ELL programs were transferred to general education programs causing ELL programs to lose one-third of its students. The decline in SY2006-SY2007 follows a decline in the enrollment in ELL programs of 42.8% between SY2003, the year before the implementation of Chapter 386, and SY2005 when the district decided to re-designate 4,366 LEP students in bilingual education programs as English proficient and insert them into general education programs (Tung et al., 2009, p.45). The SY2006-SY2007 transfer to general education did not involve re-designation (these students continued to be designated as LEP students). The transfer involved primarily students in the lower grades (54.6%), of all English proficiency levels (42% at MEPA performance Levels 4 and 5 and 20% at Levels 1 and 2). Forty-two percent were students designated as LEP-SWDs.

Although the declines in enrollments in ELL programs are usually offset by the increasing demand for them, over the years, the sudden transfers of students have resulted in a decline of close to 30% in the enrollment of students in ELL programs since SY2003. These transfers do not appear to be the result of a thorough process of student assessment leading to re-designations or a normal pace of transitions out of ELL programs. The pattern resembles what one would expect as the result of an administrative decision, raising the question of BPS's intentions in regard to its programs for ELLs.

The transfers and declines in participation in ELL programs have not taken place under the current administration of the Boston Public Schools, but nevertheless it is up to this leadership to send a clear message about its commitment to its programs for English language learners. During the implementation of Chapter 386, ELL programs were often seen as no longer necessary since LEP students would quickly be ready for integration into general education classrooms. But this is an unsound policy based on the assumption that ELL students attain academic proficiency in English in one year. Nothing in the literature or in this study provides evidence that students acquire academic English proficiency in so short a time. The literature shows clearly that LEP students who had not participated in ELL programs had lower testing outcomes and the highest dropout rates compared to students who had participated in any type of ELL program (Lindholm-Leary & Borsato, 2006; Thomas & Collier, 2002). The discussion in the educational research literature is about what type of program works best, not whether students should be in a program. Our own findings show that when ELLs in BPS are placed in general education programs they have higher dropout rates and that their outcomes across all subjects (when observing students scoring at the highest levels of English proficiency) are surpassed by those in Two-Way Bilingual and TBE programs.

A clear statement of mission of the BPS ELL programs and the district's commitment to them as a method would go a long way to support the work of teachers and schools engaged in these programs, to allay the concerns of parents of ELL students. Such a commitment would allow these programs to grow, to be creative in their instruction, and to improve.

Learning English / Learning Content

This study has underscored that English proficiency is the most powerful variable in determining the educational outcomes of English language learners in Boston. It was found to be the most important variable in determining MCAS outcomes across all grade levels and subjects. MEPA performance level was also found to be significant in relation to the dropout rate of high school LEP students, as well as in attendance and retention in grade of these students. Of the variables examined in this study, none had more of an impact on the educational outcomes of LEP students than English proficiency.

This finding leads to questions regarding LEP students' acquisition of English and the linguistic access to academic content available to them. The first related to the length of time that LEP students need to attain proficiency in academic English, i.e., the English that allows them access to grade-level academic content. Although the three-year trajectories through the MEPA performance levels of LEP students reported in Chapter V are not conclusive, they do provide an indication that the acquisition of academic English requires more than this length of time for the majority of students. This longer trajectory was especially the case among middle school and high school students. Boston is not exceptional in this. The educational research literature reviewed for this report shows that the acquisition of academic English takes from four to seven years.

This reality leads to the second concern. The normal road to academic English proficiency would be acceptable for these students if they were receiving instruction of academic content – Math, science, social studies – in a language they understood while they were learning English. If this were the case, once they attained English proficiency they could join their peers at grade level. That is not possible in Boston or in the state because English language learners are unable to participate in content classes that are linguistically accessible to them (except if parents submit a waiver requesting non-SEI program placement) and because English language learners are not always taught by a teacher with experience in making the content accessible across the language divide. The barrier to the former is Chapter 386 of the Acts of 2002 and its implementation; the barrier to the latter is the lack of appropriate professional development of teachers.

This leaves LEP students, especially the older ones, in a quandary. LEP students at the lowest MEPA performance levels slowly declined in BPS during the study period but still accounted for 23.9% of all LEP middle school students and 24% of all LEPs in high school. The MCAS pass rates of middle school LEP students performing at the lower levels of English proficiency (as measured by MEPA) only reached 22% in Math, and other scores were much lower. Among high school LEPs, the highest pass rates (also in Math) barely reached 15%. In high school, about 18% of LEP students are retained in grade, many of them in ninth grade to avoid having them fail the tenth grade MCAS exams. Among twelfth graders who dropped out in SY2009 and who were enrolled in BPS for all four years of the study period, 22.4% had passed the MCAS but 63.2% had failed either the tenth grade MCAS ELA or MCAS Math tests. High school dropout rates among students at these low English proficiency levels were more than three times those of the LEP students at the higher levels of English proficiency. These students seem to be assessing their chances and dropping out because – given what they are offered – they see no possibility for success in passing the MCAS ELA and Math exams and graduating from high school. Everything we have analyzed in this study shows that this is a reasonable assumption.

Educating middle school and high school LEP students at the lower levels of MEPA performance requires alternative approaches to instruction and alternative approaches to measuring achievement. Both the 1993 Education Reform Law and Chapter 386 of the Acts of 2002 allow for these exceptions; these students will have no real opportunities unless they are provided with these options (Commonwealth of Massachusetts, 1993, 2002). The Proficiency Gap Task Force (2010) recommended to the Massachusetts Board of Elementary and Secondary Education that MDESE support the development of alternative programs (e.g., TBE programs) for older students with these low levels of proficiency. This would allow the students to learn English while they are also learning grade-level content in their own language. Similarly, alternative measures of achievement in addition to or in place of the MCAS can be implemented under the 1993 Education Reform law. This can include portfolios of high-quality student work in their own language and in English, and testing in Math that is both rigorous and accessible linguistically.

Students of Limited English Proficiency with Disabilities (LEP-SWDs)

About 42% of the students transferred out of ELL programs in SY2006-2007 went to special education programs, many of them young students under Grade 3. One could argue that this was a positive development if there had been a thoughtful assessment of these students, conducted with appropriate testing protocols and with trained bilingual staff. The transfers could also be considered positive if it had resulted in appropriate language supports and instruction provided by special education teachers trained to address the specific needs of LEP-SWDs. Neither one appears to be the case in this transfer.

Designation as student with a disability (i.e., receiving special education services) is the second most important variable in determining the educational outcomes of ELLs in Boston. The gap in MCAS scores between LEP-SWDs and LEP students was 30 percentage points in ELA and almost 20 percentage points in Math in fourth grade and 15 percentage points in ELA and 20 points in Math in tenth grade. LEP-SWD students had higher dropout rates than LEP students (but slightly lower rates than SWDs who are English proficient). In view of the large migration of young LEP students into SPED programs in SY2006-SY2007 – without assurances that those transfers were based on accurate evaluations and that these students would be greeted with appropriate services – these findings are worrisome.

As was the case in our discussion of enrollments, this situation pre-dates the presence of the current leadership of both BPS and of the special education programs in the district. But this does not negate the responsibility for the present leadership to redress this situation by assuring that (1) there are appropriate protocols for the assessment and placement of LEP students in SPED programs and that these are followed; (2) there are appropriate services in place for LEP students placed in SPED programs; and (3) the SY2006 referrals to SPED programs are evaluated to ascertain their appropriateness.

Addressing the "Culture of Failure"

One of the most hopeful points of this analysis was the observation of the success of LEP students once they attain English proficiency. Once LEP students reached MEPA Level 5 the outcomes of LEP students out-paced those of EP students across all subjects in Grade 4, in Math in Grade 8, and in ELA and Science in Grade 10. In those subjects in which EP students outscored LEP students, the gaps were very small. Yet because it takes time for students to reach MEPA Level 5, because of the restrictions imposed by Chapter 386, and because of the pressure to assess students prematurely, intensely, and inappropriately, the image most hold of LEP students is one of failure. Principals are concerned about the impact of ELLs on their school's AYP scores; school personnel hold unrealistic expectations of the process of language acquisition and see their students as "lacking" and "failing"; the students themselves perceive themselves as "failing"; and parents year after year receive a notice that communicates to them that their child has "failed" the MCAS. All of this delivered without any explanation that it is not expected for students who are in the process of learning academic English to pass tests developed for English proficient students solely in English.

BPS is bound by national and state law to test students yearly in a variety of areas but it needs to take a more proactive stand regarding the appropriateness and the effect of testing on low English proficiency students in middle school and high school. Both federal and state laws allow for alternative forms of testing achievement and BPS, with a contingent of LEP students reaching 28.0% of its enrollment in SY2011, should seek remedy for the most vulnerable. NCLB requires that LEP students be tested in ELA after the first year in the U.S. and offers no exemptions for testing in content areas and offers little in terms of flexibility; it does recognize that LEP students present "unique challenges" (U.S. Department of Education, 2007, p.3). Federal regulations offer the possibility of "assessments in the language and form most likely to yield accurate data on which such students know and can do in academic content areas" (p. 11). This has included testing content areas in students' native language for the first three years after arrival in the U.S. At the state level, the 187th General Court of the Commonwealth's Chapter 69.1.I, provides that "As much as is practicable, especially in the case of students whose performance is difficult to assess using conventional methods, such instruments shall include consideration of work samples, projects and portfolios, and shall facilitate authentic and direct gauges of student performance" (Commonwealth of Massachusetts, 2011). Both federal and state law leave the door open for alternative testing for these vulnerable students. This alternative is not an opportunity for lesser accountability in regards to the achievement of LEP students, but rather an opportunity to develop assessment that measures accurately what they "know and can do" in academic areas.

The key terms here, of course, are "as much as is practicable" given funding constraints and MDESE's priorities. The development of alternative assessment requires investment so that they are a measure of similar quality of other state tests. These alternative assessments also need to be available in a variety of languages.

Nevertheless, with the numbers of LEP students across the state on the rise, Massachusetts' educational leaders should consider additional options for testing requirements and measures. As the State

engages with the federal government in negotiating increasing flexibility regarding NCLB, this is an area that should be considered and Boston would do well in recommending strongly that the State seek additional flexibility in the testing LEP students at low levels of English proficiency.

The district should request to be allowed by MDESE to take full advantage of NCLB's exemption from reporting MCAS scores of LEP students in their first year in the U.S. for the purposes of AYP determination (U.S. Department of Education, 2007). This is a small accommodation for schools whose accountability status is affected by the presence of students at low levels of English proficiency. Again, Boston, with a high proportion of LEP students in its enrollment and a broad distribution of LEP students across the district's schools, would benefit from providing this exemption for its schools. This exemption, though small, would recognize the schools' efforts in educating ELLs and would build a stronger understanding of what constitutes realistic expectations of MCAS results for students at low levels of English proficiency.

Finally, although BPS needs to report scores for LEP students in the aggregate, a requirement which ignores the effect of language proficiency on the outcomes, it should aim to find a way to communicate a more realistic message to school staff, to parents, and to the students themselves. Better understanding of the process of language acquisition across staff charged with the education of ELLs is imperative so that their expectations and perspectives can line up more closely with what we know to be true. Information for school staff needs to allow them to "take English proficiency into account" in the interpretation of MCAS results, not only so that appropriate placements and instruction can take place but also to facilitate the assessment of English acquisition in relation to those outcomes. Similar information should be available to parents with clear statements about the MCAS performance that is appropriate for students at specific levels of English proficiency.

Instilling an image of "failure" solely because a student does not have academic English proficiency is damaging in the school setting and beyond. Reversing the "culture of failure" requires that educators understand the problem, de-politicize the process of education of LEP students and bring to the task good educational and assessment practices.

Middle School Students

Middle school LEP students seem to be particularly vulnerable to poor educational outcomes, with very low MCAS outcomes across all subjects. Although the data is not clear on this, there is some evidence that dropping out begins in middle school for many LEP students. They received out-of-school suspensions at a very high rate, three and five times higher than those of their elementary and high school peers. Rates of suspension were higher among students at the lower levels of MEPA performance. Overall, the outcomes for middle school students at these levels of MEPA performance are of great concern since these were lower than those of LEP students in other grade levels. Their situation in BPS needs focused attention.

Middle school LEP student outcomes seem to suffer in large middle schools and in SEI programs. Middle school students appear to do better in the few Two-Way Bilingual and TBE programs available for them in BPS. In those programs their outcomes were close to or surpassed those of English proficiency students. Interventions should focus on the development of programs in smaller schools and special attention should be placed on entering students who are just starting to learn English. The situation of students at the lower levels of MEPA performance seems to be the most difficult and their outcomes are the worst. TBE programs may be most appropriate to engage these students of low English proficiency in schooling. Middle school students' outcomes in SEI programs of both types were extremely low, indicating that this modality does not offer enough access to the type of academic content required to be successful in the MCAS. Overall, BPS needs to pay close attention to the situation of middle school LEP students and to the development of more appropriate programs for them.

B Specific Findings and Recommendations Related to Enrollment and Characteristics of English Language Learners

Trends

- Between SY2006 and SY2009, the overall enrollment of BPS decreased by 3.9%. The enrollment of students of limited English proficiency and students who are former LEP students increased by 12.3% and 39.0% respectively. These were the only populations to experience growth in this period.

Student Characteristics

- LEP students showed a slightly higher representation of males (53.6%) than females and a high proportion of low-income students (87.3%). About 12.9% were students who were mobile and changed schools within a school year, and about 18.7% were students with disabilities.
- Most LEP students were Spanish speakers (56.6%), with Haitian Creole, Chinese, Cape Verdean Creole, Portuguese, and Somali speakers composing the bulk of the rest.
- In terms of English proficiency, the majority of LEP students scored at the higher performance levels (Levels 3, 4, and 5) of the Massachusetts English Proficiency Assessment (MEPA); the largest proportion scored at Level 3. Across the four years examined, there was a clear tendency for the number of students at the lower proficiency levels to decline, likely the effect of the observed decline in immigration to the region.

LEP Enrollment in Different Types of Schools

- Analysis of LEP student enrollment in schools of different characteristics points to several risk factors:

  (1) LEP students were enrolled in high-poverty schools at a much higher rate than English proficient students: 81.6% compared to 60.1%.

  (2) LEP students were overwhelmingly enrolled in schools that did not meet accountability status in ELA (77.5%) or in Math (85.0%).

  (3) Students' MEPA performance level and their designation as LEP-SWDs have broad significance in the distribution of students across schools of different characteristics. Low MEPA performance level was found to be significant in the distribution of students across all types of schools considered here. Most notably, higher proportions of these students were found in schools with lower teacher qualifications. Designation as a LEP-SWD was also found to have broad significance in the distribution of students in schools of lower LEP densities and where a lower proportion of teachers are licensed in their teaching assignment.

Recommendation 1: The fact that LEP students are more heavily concentrated in high-poverty schools and in schools that did not meet AYP – and that the most vulnerable LEP students are exposed to a teaching corps with less qualifications than is average for the district – suggests that the district needs to pay more attention to the assignment of LEP students, assuring that they have access to "seats" in schools with more favorable characteristics.

- LEP students in Boston are not segregated or highly concentrated: 88.4% were in schools with less than 50% LEP density. LEP students also tend to be enrolled in schools where a high proportion of core courses are taught by highly qualified teachers (72.9%).

Recommendation 2: The district should continue to be watchful of its assignment of LEP students so that they are not overly concentrated with other language-minority students and without access to English-speaking students.

Enrollment in Programs.

- While the enrollment of students of limited English proficiency in Boston increased steadily between SY2006 and SY2009, there were strong shifts in the enrollment of LEP students in different programs. The most salient was the 23.6% decline in the enrollment in programs for English language learners and a 267.7% increase in the enrollment of LEP students in educational settings

which are not specifically designed for the instruction of ELLs (for example, general education classrooms and special education programs).

This shift in students took place between SY2006 and SY2007, when 2536 students were transferred from ELL programs to programs not designed for ELLs. Of these students, 54.5% were students in Grade 3 or lower, 42.8% were students at the higher levels of English proficiency (but 20% were at very low levels), and 42.0% were designated as students with disabilities.

Recommendation 3: The large transfer of ELL students out of ELL programs between SY2006 and SY2007 points to the need for the district to have a clear and consistent process for the transfer of students out of ELL programs. It also needs to develop and communicate clear criteria for designating and de-designating students as LEPs.

Recommendation 4: The district should refrain from transferring students with low English proficiency out of ELL programs, particularly students transitioning out of elementary school and those in middle school and in high school. Dropout rates among LEP students at these grade levels and at these levels of proficiency are very high in comparison to the rates of similar students in ELL programs.

Recommendation 5: Students of limited English proficiency who also have one or more disabilities are legally required to receive both ELL and SPED services. Placement only in an ELL program or only in a SPED program is not an appropriate education for LEP-SWDs. To echo the comments at the beginning of this chapter, BPS needs to increase its capacity to conduct proper identification, assessment and placement of LEP-SWDs. No students of limited English proficiency who do not have a disability should be placed in a SPED program merely because there is no ELL "seat" in their school.

- Most students in ELL programs are enrolled in SEI programs (88.1%). Two-Way Bilingual, TBE, and SIFE programs, together, account for the rest.
- There are significant differences between students in different types of programs along key variables generally associated with academic outcomes.

  (1) Students in ELL programs were more likely to be mobile and to have lower levels of English proficiency than students not in programs for ELLs.

  (2) The comparison among the different ELL programs – Sheltered English Immersion, Two-Way Bilingual, programs for students with interrupted formal education (SIFE), and Transitional Bilingual Education – shows that SIFE programs stand out for their higher proportion of male students, of students who are mobile, and of students at the lower levels of English proficiency as well as the lower proportions of those who are of low income.

  (3) Two-Way Bilingual and TBE programs stand out for the high proportion of low-income students in their enrollment.

Recommendation 6: Because of the wide diversity of LEP students' situations and characteristics, increasing the availability of programs is critical to addressing their educational needs. Program options need to be expanded so that appropriate programs are available for different types of students. For example, given the strong showing of Two Way Bilingual programs among elementary school students, more seats in this type of program should become available. These programs also need to be designed in a way that accommodates students at different levels of English proficiency. There is also a need to increase seats in programs appropriate for students at the lowest levels of English proficiency at the middle school and high school levels. Appropriate programs for students at these grade levels should support the acquisition of English as well as provide appropriate linguistic access to academic content in order to engage them in schooling.

Recommendation 7: Parents of LEP students need to be informed about the program options available to their children, the differences in instruction each entails, and the outcomes BPS students have shown in these programs. Today, the BPS website offers parents only SEI programs as a choice.[1] The fact that SEI programs have lower outcomes than other programs for ELLs may keep parents away from all programs for ELLs.

C Specific Findings and Recommendations Related to English Acquisition

- *Characteristics of Students at Different Levels of English Proficiency.*
  - In SY2009, the majority of LEP students in Boston scored in the middle levels of proficiency, Levels 3 and 4 (61.7%) on MEPA. Males and mobile students were over-represented among those LEP students scoring at Levels 1 and 2 of MEPA in SY2009. Among students at Levels 4 and 5, the most salient characteristics were their stability (only 3.8% changed schools in SY2009 compared to 9.9% among all test-takers) and the higher representation of girls in their numbers (49.8% compared to 46.8% among all test-takers).
- *Level of English Proficiency Required to Access Academic Content and Length of Time Required to Acquire This Level of Proficiency.*
  - We used passing MCAS ELA as the indicator of the attainment of academic English. The expectation is that students at high MEPA performance levels would have a level of English proficiency that allows them to pass MCAS ELA at rates comparable to those of English proficient students. We found that among elementary and middle school students only those at MEPA Level 5 obtained pass rates in ELA comparable to those of English proficient students. Among high school LEP students, those scoring at both Levels 4 and 5 of MEPA had pass rates comparable to those of their English proficiency peers.
  - Analysis of language acquisition among third, sixth, and ninth grade cohorts formed in SY2006 from students testing at MEPA Level 1 shows that the trajectory of the Boston cohorts were similar to those reflected in the research and confirms that language acquisition takes significantly more than three years for most students.

Recommendation 8: In the current Massachusetts education policy environment, appropriate access to content is dependent on being proficient in English. Consequently, educational leaders, principals, and teachers need to have a profound understanding of the process of second language acquisition and of the importance of English language development levels in the planning of programs, in the assignment of students to these programs, and in the instruction students receive in them.

Recommendation 9: The district needs to underscore the importance of the MEPA test so that school personnel, as well as parents and students, understand its relevance. School personnel need to take the test seriously and prepare their students well for the test. Students should be informed about the test and its importance so that their English proficiency can be adequately assessed. Parents need to understand the importance of the test so that they can support their children in the process of testing and program assignment.

Recommendation 10: Students at the lower levels of MEPA performance are at great risk of low educational outcomes in the Boston Public Schools. They are exposed to expectations of performance (on the MCAS) that are unrealistic and impossible for them to attain; they are retained in grade in high numbers; and they do not have linguistic access to a curriculum that engages them in learning. As a result 23% of students who performed at MEPA Level 1 in ninth grade dropped out of school by the twelfth grade.

The Boston Public Schools should:

(1) develop interventions for late entry ELLs at the lower English proficiency levels and monitor closely their social and academic progress.

(2) focus special programmatic attention on the transition grades (fifth to sixth and eighth to ninth grades).

(3) place all students performing at MEPA Levels 1 to 3 in ELL programs. English language learners at this level of English proficiency who are placed in general education settings have much higher dropout rates.

(4) seek remedy from the application of tests of achievement in which LEPs students at MEPA levels 1 and 2 are unable to demonstrate what they "know and can do in academic content areas" and collaborate with MDESE in the development of alternative measures of achievement as allowed by law. (See Recommendation 23.)

Recommendation 11: The highly politicized process that led to the passage of Question 2 profoundly misinformed the Massachusetts public about the characteristics of English language acquisition and the time required to attain academic English proficiency. The Boston Public Schools, the district with the highest enrollment of LEP students in Massachusetts, needs to lead the way in providing accurate information to the public and to policy makers on this issue. Without ignoring the law of the state, it needs to be forceful in its communication of the reality of acquiring a second language, the realistic expectations of students at different language proficiency levels, and the kind of instruction required for LEP students to be successful in one of the most competitive educational environments in the nation.

D Specific Findings and Recommendations Related to Dropout Rates

Trends

- The dropout rates of high school students have declined substantially between SY2006 and SY2009. By SY2009, the high school dropout rate of LEP students was lower than that of English proficient students.
- Among LEPs, the largest proportion of dropouts (30.8%) left school in the ninth grade.

Recommendation 12: Develop a strong sense of community and belonging for LEP students in early high school. Attention needs to be paid to the process of transition between middle school and high school grade levels, to the change in schools as well as well as to students' individual development needs.

Recommendation 13: Collaborate with community partners in the design of support services for ELL students, specifically for the transition years, such as mentoring and youth development programs.

Individual Factors Related to Dropping Out.
Gender, income, mobility, and English proficiency were found to be significant in the dropout rates of high school LEP students.

- Comparisons of the characteristics of LEP high school students who dropped out with those of LEP students who remained in school, showed that among high school dropouts there was a higher proportion of males; of those who were not eligible for free or reduced price lunch (not low-income); of native speakers of Spanish and Portuguese; of mobile students; and of students scoring at MEPA Levels 1 and 2, as compared to LEP students who did not drop out. All of these differences were found to be statistically significant.
- LEP students who dropped out of high school in SY2009 had a significantly lower median attendance rate and significantly higher out-of-school suspension and retention rates than those who did not drop out.

Recommendation 14: Monitor indicators such as mobility, English proficiency, attendance, and retention to identify students most at risk of dropping out. OELL should set up structures and policies to help schools monitor these indicators.

Recommendation 15: Since retention is a leading risk factor for dropping out, improve grade promotion rates through a focused attention on the quality of the instruction available to LEP students at the lowest MEPA levels, who are the students most often retained.

Recommendation 16: Spanish, Haitian Creole, and Cape Verdean Creole speakers have the highest dropout rates among LEP students. They also face the greatest challenges in terms of attendance (except Haitian Creole speakers) and suspension rates. The district should seek support from community groups working with these populations for a better cultural understanding and for help with student engagement. These and other students at risk of dropping out need mentoring, academic support, and wrap-around services delivered by culturally competent staff who are able to provide linguistically appropriate services to the students and clear information to parents.

School and Program Factors Related to Dropping Out.

- Factors related to school characteristics and program participation also proved to be significant in the dropout rates of LEP students. A school's LEP density was found to be significant in relation to the dropout rate of LEP high school students. The high school dropout rate of LEP students in schools with LEP concentrations between 30 and 50% was 11.6%, much higher than the dropout rate of students in schools with higher densities of LEP students (6.7%) or those with lower densities (5.3%). There are 19 high schools in BPS with this characteristic.

Recommendation 17: BPS should assess the conditions at high schools producing such high rates of ELL dropouts and develop plans to address the causes of this problem.

- The dropout rate was also higher in high schools that did not meet AYP goals, suggesting that "good schools" are better able to engage these students. Surprisingly, high schools with teachers with higher qualifications had higher dropout rates indicating that (1) there is no assurance that teachers with high qualifications are consistently teaching LEP students in these schools and that (2) additional interventions – in addition to the presence of good teachers – are required to retain students in school.
- Comparison of the dropout rates of students in ELL programs and those not in ELL programs showed that the high school dropout rate was lower among LEP students enrolled in ELL programs than among those in programs not for ELLs. Dropout rates among students not in ELL programs were particularly high among those scoring at the lower levels of MEPA. Students in ELL programs had higher attendance and lower suspension rates than those not in programs. But they also had a much higher retention rate.

Recommendation 18: LEP students, especially those at the lower levels of English proficiency, should be enrolled in ELL programs. These programs are better able to engage students and prevent their dropping out. Parents of students who test at MEPA Levels 1 and 2 should be informed of the advantages of having their child attend an ELL program.

Recommendation 19: Provide linguistic access to grade-level academic content for middle school and high school LEP students at the lowest levels of English proficiency. This can be done by increasing "seats" in TBE programs and expanding access to TBE programs in other languages in addition to Chinese.

- Sixty-three percent of the SY2009 twelfth graders (who were enrolled in BPS for all four years of the study period) who dropped out had failed one or both of the tenth grade MCAS ELA and Math exams.

Recommendation 20: Federal and State laws allow for the development of alternative ways of testing achievement in addition to the MCAS. The state and the district should develop these alternatives for LEP students at the lowest levels of English proficiency, particularly for late-entrant ELLs who will likely not have time to attain the level of proficiency required to pass content-based MCAS tests in time to graduate. (See Recommendation 23.)

Recommendation 21: There should be a clear path to graduation for ELLs at different levels of English proficiency that includes a specific sequence of courses and activities – including summer and Saturday school – so that all students who are motivated and able can pass the MCAS or its alternatives and graduate from high school.

E Specific Findings Related to Outcomes on the MCAS

- Using the MCAS pass rates for the aggregate of LEP students, there is evidence that there have been strong gains in MCAS outcomes across all subjects and grade levels. When comparing students' performance in SY2009 to SY2006, we found that ELA, Math, and Science pass rates rose at every grade level without exception and that gaps between LEP and EP students declined. But in spite of this advance, the pass rates remained very low and the gaps between LEP and EP students remained wide.
- Taking language proficiency into account shows that, as expected, MCAS scores are very low among students scoring at MEPA performance Levels 1 through 3. Once MEPA Level 5 was reached, the outcomes of LEP students were higher than those of EP students across all subjects in Grade 4, in Math in Grade 8, and in ELA and Science in Grade 10; in those subjects in which EP students outscore LEP students, the gaps remained below 6 percentage points. This highlights the significant role of language proficiency in the demonstration of achievement in the MCAS. It also demonstrates the inappropriateness of the MCAS test as a measure of achievement for the LEP students at the lower MEPA performance levels.

Recommendation 22: BPS should set clear and realistic expectations of the level of achievement in MCAS tests for students at different levels of English proficiency (especially at the lower levels) and communicate these to parents and school personnel. It should also communicate clearly the positive outcomes that derive from higher levels of proficiency in order to stimulate students' work to acquire English proficiency and parents' support for their efforts.

Recommendation 23: NCLB, the 1993 Massachusetts Education Reform Act, and more recent state law collected under Chapter 69 and Chapter 71 A allow for the development of alternative measures of achievement for "students whose performance is difficult to assess using conventional methods" (Commonwealth of Massachusetts, 2011). BPS should request this remedy from the state and collaborate with MDESE to develop alternative measures of achievement for LEP students at MEPA levels 1 & 2. These accommodations can include testing academic content in L1, using testing programs such as ONPAR (Kopriva, 2009) for the assessment of Math and Science content, or developing portfolios of multiple assessments that would better measure the true extent of the knowledge acquired by LEP students with low English proficiency.

Recommendation 24: While more appropriate measurements of achievement are developed by the state, BPS should seek authorization from MDESE to expand the use of accommodations for testing.

(1) the only accommodation allowed by Massachusetts (in addition to the exemption from testing in ELA in the students' first year in the U.S.) is the use of a dictionary. This has not proven to be as effective an accommodation as, for example, extra testing time, small group and individual administration, and/or a glossary of key terms (Abedi, Hofstetter, & Lord, 2009). BPS should request that MDESE add these accommodations and implement them across BPS schools during testing.

(2) We found instances in which students had taken MCAS ELA tests when they had been in the country less than a year. Until the testing regime is changed, school staff should be made aware of the exemptions and asked to respect them.

Recommendation 25: The district should take full advantage of NCLB's exemption from reporting MCAS scores of LEP students in their first year in the U.S. for the purposes of AYP determination (U.S. Department of Education, 2007). This is a small accommodation for schools whose accountability status is affected by the presence of students at low levels of English proficiency. This exemption would acknowledge schools' efforts and build a stronger understanding of what constitutes realistic expectations of MCAS results for students at low levels of English proficiency.

Differences in MCAS Outcomes among LEP Students of Different Demographic Characteristics

- The individual factors that proved to be most significant in MCAS ELA and Math pass rates at all grade levels were English proficiency and disability. Regression analysis supported the descriptive findings by underscoring the power of language proficiency in explaining the variation in the ELA and Math MCAS scores of LEP in all grade levels. The same was the case in the effect on outcomes of students designated as having a disability.
- Mobility was significant in the MCAS ELA pass rates of elementary and middle school students and in the Math pass rates of middle schoolers. Gender proved significant in the MCAS pass rates of LEP students at the elementary and high school levels. These findings were not reinforced in the regression analysis.
- Significant differences in the attendance rates of LEP students who passed/did not pass MCAS tests in all areas were also found, where those who passed MCAS showed higher attendance rates than those who did not.

Recommendation 26: The MCAS outcomes of LEP-SWDs were by far the worst of any group: worse than LEP students without disabilities and worse than those of other SWDs. There is a full discussion of this issue at the start of this chapter but here we underscore the need for appropriate assessment and the availability of language support resources in SPED programs, including the capacity for communication with students' families.

Recommendation 27: The importance of attending school every day needs to be communicated early and often to all immigrant parents, explaining the pervasive impact it has on the educational outcomes of their children. The effect of attendance on student outcomes should also be part of what adults communicate to students in the school setting as well as the afterschool and community programs in which they participate.

Differences in MCAS Outcomes among LEP Students in Different Types of Programs

- The comparison of outcomes of students across all programs showed that ELA pass rates were highest among elementary and middle school students attending the three Two-Way Bilingual programs. Among high school LEP students, those in the only TBE program showed the highest pass rates in ELA. In all other programs, ELA pass rates were very low.
- In MCAS Math, Two-Way Bilingual and TBE LEP students, again, scored the highest of all groups of LEP students considered here. The pass rates of Two-Way Bilingual students were the highest among elementary school LEPs students and those of TBE students topped all others in middle school and high school. Aside from the rates of the students in these two programs, which almost reached those of EP students, pass rates for LEPs were very low. They were particularly low among middle school students.

- In MCAS Science, pass rates for all groups of LEP students considered here are very low, particularly for middle school students. Among LEP students in elementary grades, those in Two-Way Bilingual programs showed the highest Science pass rates. At the middle school and high school levels, students in TBE programs outscored all others, including English proficient students.
- SEI programs are the largest programs for English language learners in Boston. Yet, SEI programs operate very unevenly. At the elementary level, they showed the lowest pass rates of all programs in both ELA (76.6%) and Math (69.5%) among students at MEPA performance Levels 4 and 5. In middle school, among students of these same proficiency levels, students in SEI programs showed the lowest pass rates overall, but students in Multilingual SEI programs outscored English proficient students in Math. In high school, SEI students outscored English proficient students in ELA and within 2 percentage points of their pass rates in Math.
- There were consistent differences in the outcomes of students in ELL and non-ELL programs, with students not in ELL programs showing stronger MCAS outcomes in ELA, Math, and Science than those in ELL programs at all grade levels (except high school Math and Science). This difference is likely due to the preponderance of SEI programs, where pass rates were very low, as well as the much higher proportion of students at the lowest levels of English proficiency in ELL programs. Nevertheless, this difference proved significant only in the MCAS Math pass rates of elementary school students.

Recommendation 28: LEP students in Two-Way Bilingual and TBE programs demonstrated the strongest MCAS outcomes. These programs are likely successful because they provide linguistic access to academic content for students at all levels of English proficiency. The district should consider expanding these programs in BPS. For example, Two-Way Bilingual programs should be more available to students at low levels of English proficiency and in more languages than Spanish/English. TBE programs are extremely limited (available in one middle school and one high school) and serve only Chinese students. These programs should be expanded and their implementation and outcomes monitored consistently.

Recommendation 29: An evaluation of BPS programs is a necessary next step in order to assess the quality of the programs and to be able to attribute any differences in outcomes to the programs being implemented in BPS. While this study analyzed the outcomes of LEP students by the type of ELL program in which they were enrolled, we were limited in our assessment because the implementation of programs within a specific type varies widely in the district. As was noted in the discussion about the research on the relationship of program type and achievement, this is a consistent problem across districts and states.

In order to better evaluate the outcomes of its programs, BPS should clearly define the characteristics of each program model and how these models differ from each other in terms of the use of native language and specific instructional practices. As much as possible, programs within each model should function in a consistent manner across the district. An SEI Spanish program in one school should "look" similar to an SEI Spanish program in another school; a Two-Way Bilingual program in one school should not "look" the same as an SEI Spanish program in another school. This would allow for the evaluation of the effects of different programs on outcomes and more effectively guide the priorities and investment of the district.

Differences in MCAS Outcomes among LEP Students in Different Types of Schools

- The proportion of LEP students in a school was significant in LEP students' MCAS outcomes in all subjects and grade levels except elementary MCAS ELA pass rates. AYP also proved significant in the outcomes of all subjects and grades except high school ELA pass rates. Poverty status, size, and the proportion of teachers licensed in their teaching assignment were also significant.

Recommendation 30: The quality of instruction is an essential ingredient in the success of any student. As was expressed by Mitchell Chester, Massachusetts Commissioner of Elementary and Secondary Education, in response to the US Department of Justice's investigation of the gaps in the qualifications of Massachusetts teachers of ELLs, teaching these students requires "specialized preparation in terms of being attuned to their needs" (Vaznis, 2011). In Boston, 67% of the teachers in middle schools and high schools and 48% of those in elementary schools have not completed the recommended 4-category training, according to the Justice Department (Vaznis, 2011). BPS needs to:

(1) provide motivation for all teachers to complete the 4-category training by offering Professional Development Points for participation as well as the opportunity to advance across salary lanes (BESE Proficiency Gap Task Force, 2010).

(2) assure that appropriate professional development for teachers teaching ELLs are included in the professional development hours negotiated with the Boston Teachers' Union in this round of contract negotiations.

(3) evaluate the quality of the professional development 4-category training offered to Boston's teachers.

Recommendation 31: Because BPS has the largest number of ELLs, it should advocate with MDESE to:

(1) strengthen current requirements for the licensure of teachers providing instruction to English language learners, reinstating the bilingual and ESL requirements to ensure the quality and effectiveness of the preparation of teachers in the state. This should include the development of licensure requirements for bilingual/ESL Special Education for teachers of LEP-SWDs.

(2) strengthen the meaning of a Highly Qualified Teacher by including in its definition elements of cultural competence related to the culture and language of ELL students and competencies related to teaching ELLs (BESE Proficiency Gap Task Force, 2010). This study showed that just having LEP students enrolled in a school with a high proportion of core academic courses taught by HQTs was not enough to affect the outcomes of ELLs, because it is not clear that ELLs in those schools are taught by those teachers or that these highly qualified teachers have adequate training in teaching ELLs.

F Other Recommendations

The analysis conducted for this study was dependent upon combining several sets of data: SIMS, MEPA, MCAS, and ELL program data maintained by OELL.

Recommendation 32: Going forward, as BPS conducts its own monitoring of the enrollment and achievement of ELLs, it is crucial that BPS has the capacity to link these datasets together. In addition, this data system must be accessible district wide, so that staff from the OELL, Special Education and Student Services, Research, Assessment & Evaluation, and other departments are all able to use the data to address the educational needs of ELLs in BPS and so that multiple departments serving ELLs are able to collaborate in the provision and monitoring of services.

[1] See http://www.bostonpublicschools.org/ELL (accessed Sept. 18, 2011).

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APPENDIX 1: Methods

Overview

The report sought to answer the following research questions:

Q1. **What were the enrollment patterns of ELLs in Boston and how did they change between SY2006 and SY2009?**

Q2. **What were the engagement and academic outcomes of ELLs compared to those of other BPS student populations in 2009? Did the outcomes of LEP students change over the period of observation (SY2006-2009)? How did outcomes differ for LEP students at different levels of English proficiency?**

Q3. **What were the engagement and academic outcomes of ELLs in schools of different characteristics?**

Q4. **What were the engagement and academic outcomes of ELLs in different types of programs?**

Q5. **What were the individual and school-level factors most relevant to the outcomes of ELLs?**

These questions were answered through descriptive statistics conducted in SPSS and an HLM regression analysis of MCAS outcomes conducted in SAS. The methodology, along with a description of the sources of the data used and an account of how variables were constructed, is outlined in this appendix.

Data Sources

1. BPS Student-Level Data

The unit of analysis for this project was the student enrolled in Boston Public Schools. The research team obtained student-level data from the BPS Office of Research, Assessment & Evaluation. The database contained demographic data from SIMS[1] as well as MCAS and MEPA[2] data. The SIMS file included data for all students enrolled in BPS for the 2006-2009 school years, as of the October 2005, June 2006, October 2006, June 2007, October 2007, June 2008, October 2008, and June 2009 SIMS pulls. March SIMS files were not requested. MCAS data included ELA, Math, and Science test results from the main test administrations in spring 2006, spring 2007, spring, 2008, and spring 2009. In addition, summer, fall, and winter MCAS administrations and ELA and Math retests and appeals were included for a total of 85 MCAS test administrations. MEPA data included test results from October 2005, April 2006, October 2006, June 2007, October 2007, June 2008, October 2008, and April 2009 test administrations.

The Office of Research, Assessment & Evaluation assigned each student a random identification number to ensure confidentiality and also to enable the data from all provided sources to be linked together in a single student-level database. In addition, for SY2009 the research team obtained from OELL a more detailed level of ELL program assignment than was available via SIMS. Beginning with an OELL ELL program spreadsheet, the research team worked with the OELL to identify the specific programs in which students participated school by school, based on OELL information, ELL students' native language, and ELL program codes in SIMS. Because of the time-intensive nature of this activity, these data were entered for SY2009 only.

The data files were merged into one student-level database. In general, data from June were used to override any discrepancies with October data (e.g., if a student was listed as male in June but female in October of a given school year, the student was assigned a male gender). Exceptions are noted in Table 1.

Exclusions

The following cases were excluded from the database:

- Cases with BPS start dates after June 30, 2009. These cases were removed because their start dates were after the end of the study period. In addition, none of these cases had any MCAS or MEPA test data and most had 0 days of attendance (DOE017) and 1 day of membership (DOE018) in BPS or 1 day of attendance and 1 day of membership in BPS.
- Cases enrolled in schools not under the authority of BPS. These schools included schools in other districts, parochial and secular private schools, and SPED schools. Many of these schools had enrollments of fewer than 30 students from our original data pull.
- Cases whose SIMS codes revealed that the students were not actually enrolled in a given school year. Students who had 0 days of attendance and 1 day of membership (0-1" students) were excluded from the operational database. For SY2009, there were no "0-1" students. The research team deemed this to be a clerical error and instead removed cases with 1 day of attendance and 1 day of membership for that school year only. Cases with an attendance code of "555" were also removed, as this is the code SIMS uses to indicate summer events (e.g., summer graduation, summer dropouts, and summer transfers).

All of these cases were removed because their inclusion would have provided an inaccurate count of the number of students actually enrolled in BPS during a given school year and would have artificially skewed data findings. Although these cases were removed from the operational database and excluded in analyses, they were included in the dropout analysis, as explained later on in this appendix. All exclusions were made in consultation with OELL, with the goal of providing an accurate capture of the BPS student enrollment from SY2006 to SY2009.

Construction of new variables

A list of all student variables included in our analysis, their source, and how they were defined and constructed appears in Table 1.

Table 1. Variables, Definitions and Sources of Data: Student Level

Variable	Definition	Source[1]
Student Subgroups		
NES	A student who is a native English speaker.	Student LEP and FLEP subgroup variables were created using BPS LEP and FLEP date designation variables to construct interim LEP and FLEP subgroup variables for October and June of each school year, respectively. Although the research team requested the SIMS variable that indicates whether a student is of limited English proficiency (DOE025), the team did not receive it and received in its place a variable containing the LEP assignment date (and also a FLEP assignment date variable) and LEP status variable from BPS. The source of the latter was not explained. Final versions of the LEP and FLEP variables were created by incorporating native language data (if the student's native language (DOE024) was listed as English, the student was *not* coded as a LEP or FLEP). In addition, based on the FLEP date, if the student spent the majority of the school year as a LEP, the student was coded as a LEP for that school year. An NSOL-EP variable was constructed to define any student whose native language was not English and who was not a LEP or FLEP. An NSOL variable was constructed that included LEP, FLEP and NSOL-EP students. An NES variable was constructed to define any student whose native language was English. By definition, an NES student was *not* a LEP, FLEP, or NSOL-EP student. Finally, an EP variable was created which included any NES, NSOL-EP or FLEP students.
NSOL	A student who is a native speaker of a language other than English (i.e., a student whose first language is not English).	
NSOL-EP	A student whose first language is not English *but* who is proficient in English.	
LEP	A student who is of limited English proficiency, incapable of performing ordinary schoolwork in English.	
FLEP	A student who is formerly of limited English proficiency.	
EP	A student proficient in English, who may be an NES, a FLEP, or an NSOL-EP. In other words, this is any student who is not of limited English proficiency.	
Demographic Characteristics		
Gender	Gender of student (% male is most frequently used in this report).	SIMS DOE009
Income	We defined low-income status as a student who is eligible for free/reduced price lunch.	SIMS DOE019 We re-categorized this variable into a dummy variable.
Native Language	Language a student has learned from birth. Also first language.	SIMS DOE024 We reported on native speakers of English, Spanish, Haitian Creole, Cape Verdean Creole, Chinese dialects, Vietnamese, Portuguese, and Somali. All other languages were collapsed into and reported as a single "other languages" category. The Chinese category was constructed by collapsing speakers of Chinese dialects, Mandarin, Cantonese, Hakka, and Fukien, all of which are identified by separate codes in DOE024.
Mobility	We defined mobile students as any student who changed schools between October and June of a given school year.	Constructed by comparing SIMS DOE015 (School ID) data from October and June SIMS for a given school year.
Race/Ethnicity		SIMS DOE010 This variable was recoded such that Non-Hispanic students are classified into the 5 race categories (White, Black/African American, Asian, American Indian/Alaskan Native, and Native Hawaiian/Pacific

		Islander) and all Hispanic students are labeled as a 6th race/ethnicity category in a single variable.
SWD	A student with a disability (SWD) is a student participating in special education programs: full inclusion, partial inclusion, and substantially separate classrooms. We report only on SWDs ages 6+, K-12.	Constructed from SIMS DOE034 (SIMS DOE032 was inadvertently not requested). According to SIMS, this variable contains data for students ages 6+.
Primary Disability	The nature of the primary disability of a student participating in a special education program.	SIMS DOE036
English Proficiency Level	The English proficiency level of LEP students as measured by MEPA in 1 to 4 (SY2006-SY2008) or 1 to 5 (2009) categories. The English proficiency level of LEPs is used both as an individual descriptor and as an outcome when discussing progress in English language acquisition.	MEPA Database. For SY2006-2008, a student's highest score on MEPA was identified for a given school year from the respective October and April MEPA test administrations and the corresponding performance level was selected for that student. When analyzing SY2009 MEPA data alone, the spring 2009 administration data (with the 5 proficiency levels) was used. In order to compare MEPA data over time, the spring 2009 MEPA data (1-5 proficiency levels) was converted to the 1-4 proficiency levels according to the concordance methodology in (MDESE, 2009b). When comparing MEPA data across time, the highest MEPA score for SY2009 was selected from the October 2008 administration and the April 2009 administration, with the corresponding proficiency level converted to the former levels when necessary.
Program Level Variables		
In ELL Program	Student enrolled in a program for English language learners (and not in a general education program). A student in an ELL program may or may not also be a student with a disability receiving special education services or a student in an alternative education program.	For SY2009, the research team compiled disaggregated program data from OELL administrative data source to assign an ELL program status to LEP students: Not in ELL program; SEI Cape Verde; SEI Chinese; SEI Haitian; SEI Portuguese; SEI Somali; SEI Spanish; SEI Vietnamese; SEI Multilingual; Two-Way Bilingual (Spanish); TBE (Chinese); HILT-SIFE Cape Verde; HILT-SIFE Haitian; HILT-SIFE Somali; HILT-SIFE Spanish; or SIFE Multilingual.[2] The disaggregated program data was entered into a school database by hand for each school. Then, SPSS syntax specific to each school with an ELL program was developed for the student-level database to recode the SIMS program and native language variables into the expanded list of programs for each student. In some cases, decisions were made about the program in which a LEP participated depending on the program present in the school. When this occurred, the research team consulted with OELL to decide the program placement for the student. This method obscured exceptions –such as a Portuguese speaker enrolled in a Spanish language specific SEI program- but we report on this data because those exceptions were not very numerous and OELL's need for a baseline of outcomes on its programs outweighed the potential inaccuracies
In SEI	Student enrolled in a Sheltered English Immersion program. SEI programs in BPS are of two types: Multilingual (students in these programs speak different languages) or Language Specific (students all speak the same language and support for students and families is available in that language). BPS offers SEI Language Specific programs in Cape Verdean Creole, Chinese, Haitian Creole, Portuguese, Somali, Spanish, and Vietnamese.	
In Two-Way Bilingual	Student enrolled in a Two-Way bilingual program. These are programs where fluent speakers of English and English language learners to learn to become bilingual and bi-literate in a second language. In BPS, all Two-Way Bilingual programs are English/Spanish.	
In TBE	Student enrolled in a transitional bilingual education program. Transitional Bilingual Education models promote a gradual reduction of instruction in the primary language as students learn English. This model's major goal is for students to build the capacity to	

In TBE	learn solely in English. In BPS, all TBE programs are for native Chinese speakers.	posed by the infrequent exceptions. Because of the time intensive nature of this process and the inaccessibility of program for SY2006-SY2008, the research team only assigned this detailed ELL program data for students enrolled in SY2009. For certain analyses, the SEI programs were collapsed into a single SEI variable and also collapsed into a multilingual/language specific dummy variable. The same was done for the SIFE/HILT-SIFE programs. In addition, all students enrolled in any type of SEI, Two-Way Bilingual, TBE, or SIFE/HILT-SIFE program was also coded as being enrolled in an ELL program. For SY2006-SY2008, ELL program data was taken from SIMS DOE026. For LEP students not in ELL programs, codes 00 (not enrolled in an ELL program) and 04 (student's parent consented to opt out of ELL program) were collapsed into a single category. For LEP students enrolled in an ELL program, codes 01-03 were collapsed into a single category. Code 01 identifies all SEI students, code 02 identifies all 2-way students (LEPs only), and code 03 identifies students enrolled in any other bilingual education program. Because SIMS does not disaggregate SEI into SEI language specific or multilingual programs and does not disaggregate "other bilingual education" into TBE and SIFE/HILT-SIFE we were unable to report on ELL programs beyond the SIMS categories for SY2006-SY2008. When comparing ELL program enrollment across time, SY2009 ELL program variables were collapsed into SIMS categories so data from all four school years could be compared.
In SIFE	Student enrolled in a program for students with limited and/or interrupted formal education and who do not have the educational skills that are needed to perform grade level academic work. High Intensity Literacy Training is available for SIFE students in language specific programs. These HILT-SIFE language specific programs include Cape Verde, Haitian, Spanish and Somali. Multilingual SIFE programs enroll students from diverse linguistic backgrounds.	
Not in Program for ELLs	A LEP student whose parent has opted out of enrolling their child in an ELL program, or, a LEP student who is otherwise not enrolled in an ELL program. A student not enrolled in an ELL program may or may not also be a student with a disability receiving special education services.	
Engagement and Outcome Variables		
Median Attendance Rate	The attendance rate measures the percentage of school days in which students have been present at their schools.	Constructed from SIMS by dividing number of days in attendance as of the June SIMS (DOE017) by the number of days in membership as of the June SIMS (DOE018). If the student was not enrolled in BPS as of the June SIMS, the attendance rate was calculated from the corresponding variables in the October SIMS.
Out-of-School Suspension Rate	The out-of-school suspension rate is the ratio of out-of-school suspensions to the total enrollment during the year.	An out-of-school suspension dummy variable was constructed from SIMS DOE046, which reports the number of times a student has received an out-of-school suspension for a given school year. If the value was above zero, we counted the student as having been suspended.
Grade Retention Rate	The proportion of students required to repeat the grade in which they were enrolled the previous year.	Constructed from SIMS by subtracting the student's grade level (DOE016) in a given school year to his/her grade level in the prior school year. If the value was zero, indicating the grade levels were the same in both year, the student was coded as having been retained in grade. We are able to report grade retention for SY2007-SY2009.
Annual Dropout Rate	See Table 3.	

English Proficiency Level	See above in this table.	
MCAS Pass Rates in ELA, Math and Science	Pass rates are the sum of the proportions of students scoring in the Above Proficient/Advanced, Proficient, and Needs Improvement performance categories in MCAS exams on these subjects in a given grade in a given year.	MCAS Database Performance levels for ELA, Math, and Science tests were converted into pass (Above Proficient/Advanced, Proficient, and Needs Improvement)/didn't pass (Warning/Failing) dummy variables for each exam. For students who took more than one science exam in a given school year, the highest score was taken from any biology, chemistry, physics, or technology/engineering exam the student took in that year. This formed the MCAS Science variable, which was also converted into a pass/didn't pass dummy variable.
Notes: [1] SIMS variable codes listed in this table were taken from the *SIMS Version 2.1 Data Handbook* (MDESE, 2008c). [2] The research team was aided by the meticulous data collection of OELL contained in the following documents and files: For HILT-SIFE Programs: Literacy Programs, Elementary, Middle School and High School for SY 2006, 2007, 2008, and 2009; For Two-Way Bilingual Programs: Spanish SRI Testing Schedule, SY2006, 2007, 2008 and 2009; For SEI Programs: Boston Public Schools' English Language Learning Programs for English Language Learners, SY 2006 and 2009 and Excel files showing all LEP students compiled by the Office of Research, Assessment and Evaluation for OELL in 11/10/2005, 12/05/2006, 11/08/2007 and 10/28/2008.		

2. School-Level Data

School-level data were calculated by aggregating data from the student-level database when possible for each school (based on the School ID, DOE015) and by downloading data from the MDESE website when those data were not available in the student-level database. Grade configuration, school size, school poverty, and LEP density variables were all constructed by aggregating student-level data as detailed in Table 2. Annual yearly progress data (AYP) for ELA and Math in the aggregate (MDESE, n.d., a) and teacher qualifications data (percentage of a school's teachers licensed in their teaching assignment and percentage of a school's core academic classes taught by teachers who are highly qualified) (MDESE, n.d., b) were downloaded from the MDESE website for each school.

Table 2: Variables, Definitions and Sources of Data: School level

Variable	Definition	Source
School Level Variables		
Grade Configuration	PK to 2; Elementary (K-5), K-8, Middle (6-8), High (9-12); Middle/High (7-12) and K-12 For MCAS results and for the HLM analysis, grade level is used (i.e., elementary, middle school and high school).	SIMS A grade configuration variable was constructed based on the range of grade levels (DOE016) of all students enrolled during the school year. A grade configuration was assigned for each school.
School Size	Size of school enrollment. We used Wasley et al (2000) to define sizes: In Elementary schools we consider the following categories: Large (>= 600 students) Medium (350-599 students) Small (<350 students) In Middle School and high school: Large (>= 1000 students) Medium (500-999 students) Small (<500 students)	SIMS A school's size was determined by computing the total number of students enrolled in the school during the school year. The variable was categorized into small, medium large according to the ranges listed to the left.
School Poverty Rate	Proportion of enrollment who are eligible for a free or reduced price lunch	SIMS The proportion of low-income students was calculated for each school by dividing the total number of students eligible for free or reduced price lunch (DOE019) by total school enrollment. The variable was categorized into 0-25%, 25.1-75%, and >75% poverty. (No schools in BPS fell into the first category).
LEP Density	Percentage of enrollment that is of limited English proficiency (LEP). A LEP is defined by MDESE as "a student whose first language is a language other than English who is unable to perform ordinary classroom work in English."	LEP variable constructed by research team The proportion of LEP students was calculated for each school by dividing the total number of LEPs by the total student enrollment of each school. The variable was then categorized into: 0-10%, 10.1-30%, 30-50%, and >50% proportion of LEP students.
Accountability Status	A school's Adequate Yearly Progress (AYP) data for the selected year. We report on the AYP aggregate for ELA and Math.	MDESE Website AYP ELA- aggregate and AYP-Math aggregate data were downloaded for each school. These were dummy variables: met/did not meet AYP (MDESE, n.d., a).
Teacher Qualifications	Two teacher qualification variables are analyzed: (1) Percentage of teachers who are licensed with Provisional, Initial, or Professional licensure to teach in the area(s) in which they are teaching. (2) The percentage of school's core academic classes taught by teachers who are highly qualified. These teachers, measured in "full-time equivalency," of core academic classes meet the NCLB definition of highly-qualified. To meet the definition, teachers must hold a valid Massachusetts license AND demonstrate subject matter competency in the areas they teach.	MDESE Website (MDESE, n.d. b)

3. Operational Database

The school-level data were then merged into the student-level database on the school ID variable. A given school's AYP and teacher qualifications data were assigned to each student enrolled in that school. Each row of data in the operational database represented a unique student.

4. Dropout Database

A separate database was created for use in analyzing dropout data only. As noted above, this database contained the "summer" and "0-1/1-1" students who had been removed from the operational database as well as all students contained in the operational database. Including in the dropout database these students who had been removed allowed the research team to analyze a more accurate dropout rate.

Syntax used in the operational database to create student subgroup variables, to merge October and June SIMS data into a single variable, and to create or categorize variables was run on the dropout database to duplicate these variables. School-level data were also merged with the student-level data in the dropout database.

A dropout variable was created, as described in Table 3. The merged October/June SIMS enrollment variable (DOE012) was recoded into a dropout dummy variable. For SY2007-2009, the following codes were collapsed into a "dropped out" category: Dropout – enrolled in a non-diploma granting adult education program (30); Dropout – entered Job Corps (31); Dropout – entered the military (32); Dropout – incarcerated, district no longer providing educational services (33); Dropout – left due to employment (34); Dropout – confirmed dropout, plans unknown (35); and Dropout – student status/ location unknown (36). All other codes were codes were collapsed into "did not drop out." For SY2006, SIMS only used one dropout category (03 "dropped out").

If a student dropped out as of the October SIMS but was re-enrolled as of the June SIMS (or listed with any other enrollment code other than the dropout codes), we did not consider the student to have dropped out. But, because we report an annual dropout rate rather than a cohort dropout rate, a student who dropped out in one school year may or may not have re-enrolled in school in a subsequent school year and may or may not have dropped out in a subsequent school year.

The research team followed the MDESE dropout methodology by: including in the annual dropout rate students who dropped out in the summer prior to a given school year as well as students who dropped out during a given school year; assigning, for summer dropouts, the grade in which the student dropped out as the grade s/he was supposed to enter for the next school year, according to SIMS; for summer dropouts, assigning the school from which they dropped out as the last school they attended in SY2008, prior to dropping out.

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Table 3: Annual Dropout Variable

Variable	Definition	Source
Annual Dropout Rate	The annual dropout rate reports the percentage of students who dropped out of school in a specific year (MDOE, 2007). We follow the MDESE dropout methodology (MDESE, 2010) and include in the annual dropout rate students who dropped out in the summer prior to a given school year as well as students who dropped out during the given school year. We report on both high school and middle school annual dropout rate. MDESE reports only on the high school dropout rate, labeling as truancy the dropout rate in middle school.	SIMS DOE012 This variable was created in the dropout database which included "summer" and "0-1/1-1" students that had been removed from the operational database. DOE012 was recoded into a dropout dummy variable. For SY2006-SY2008, codes 30-36 into "dropped out;" all other codes were codes were collapsed into "did not drop out."

5. Limitations of the Data

While the analysis conducted for this project offers a review of a unique combination of data and variables, we were constrained by a number of limitations and clerical errors present in our SIMS, MCAS, MEPA, OELL program data, BPS student data, and MDESE school data sources. The study relies on administrative data that the researchers themselves did not collect. The use of administrative data of any type poses challenges to researchers, since one is not able to control its collection and completeness. Variables with limitations to note include:

- **ELL Program Variable for SY2009.** At the time of our initial data request, the research team was unaware that OELL maintained records on the specific ELL program placement of individual students, in greater detail than is collected via SIMS. While access to this data was obtained, we were not able to import the data on a match with the randomly generated student ID number and therefore these data were entered by hand. Being able to link these two datasets by the ID number would have ensured greater accuracy for this ELL program variable. The team attempted to mitigate errors by working with OELL to enter students' program placement. In addition, it is important to note that conversations with OELL staff revealed that there was a lack of program fidelity during the study period. For instance, an SEI Spanish program in one school may be implemented very differently from an SEI Spanish program in another school; a school that does not offer any ELL programs could be using SEI instructional strategies consistently in its classrooms. The lack of adherence to systematic program definitions means that analysis of differences in outcomes by program may be explained by differences in practice within (and between) program types.
- **Dropout Variable.** Dropout data may be most subject to clerical errors or subjectivity on the part of the staff person entering the data (particularly, for instance, when a student is coded as a dropout whose status/location is unknown). After these data are submitted by districts, MDESE checks to ensure that students coded as dropouts have not re-enrolled in another district within the state. Dropout rates reported by MDESE reflect this adjustment. Our dataset does not contain this check, and therefore our dropout rates may be overstated. However, the research team compared our dropout rate findings with the dropout rates reported by MDESE.

For SY2009, our data show a lower high school dropout rate than MDESE data. We are only able to compare BPS and MDESE data for high school dropouts, as MDESE does not publicly release middle school dropout data.

Our data show higher dropout rates for Grades 9 and 11 than MDESE data, but our data show lower dropout rates for Grades 10 and 12.

Table 4: Annual High School Dropout Rates. BPS, SY2009

	Total HS N	HS Dropout N	HS Dropout Rate
Total BPS (Source: MDESE)	18,037	1,308	7.3%
Total BPS (Source: data received for this study)	20,781	1,426	6.9%
Source for MDESE data: MDESE (2009c)			

Table 5: Annual High School Dropout Rate by Grade. BPS, SY2009

	9th grade	10th grade	11th grade	12th grade
Total BPS (Source: MDESE)	6.1%	7.5%	7.2%	8.5%
Total BPS (Source: data received for this study)	7.0%	6.5%	7.8%	6.5%
Source for MDESE data: MDESE (2009c)				

Table 6: Annual High School Dropout Rate for LEP and EP Students. BPS, SY2008

MDESE Data for BPS, SY2008			BPS data received for this study, SY2008		
Total HS Dropout Rate	EP HS Dropout Rate	LEP HS Dropout Rate	Total HS Dropout Rate	EP HS Dropout Rate	LEP HS Dropout Rate
7.6%	7.5%	8.3%	8.3%	8.3%	8.6%
Source for MDESE data is English Language Learners Subcommittee (2009).					

For LEP and EP students we can only compare SY2008 data (SY2009 data are not reported in ELL Sub-Committee, 2009). Unlike for SY2009, our data show higher dropout rates than MDESE data for SY2008.

In addition, the way in which some data were calculated or analyzed may also be subject to some limitations.

- **Grade Retention.** The construction of the grade retention variable relied upon comparing a student's grade in one school year to his/her grade in the previous school year, which means that if the student was not enrolled in BPS for two consecutive school years, we were unable to determine if the student had been retained. This may have led us to underestimate grade retention.
- **MCAS for LEP Students in Their First Year in U.S. Schools.** When reporting MCAS ELA data, we did not exclude any LEPs in their first year in U.S. schools from our analysis. While this group of students is not required to take the MCAS ELA exam, there were some students coded as LEPs in their first year in the U.S. who had MCAS ELA scores. Because we could not verify if these students were incorrectly coded as being in their first year in U.S., we did not exclude them. In addition, including these students allowed for comparison of MCAS ELA pass rates across the four years of our study period, as the LEP in first year in U.S. schools variable was not present in SIMS data collection in SY2006-SY2007.

We also compared MCAS data received for this study to BPS MCAS data reported by MDESE. MCAS pass rates calculated from data received from this study are in general only a few percentage points higher than MCAS pass rates reported by MDESE. We include the comparisons in the tables below.

Table 7: MCAS ELA, Math, and Science Pass Rates for LEP and EP Students. BPS, SY2009

	EP			LEP		
	MCAS ELA Pass Rate	MCAS Math Pass Rate	MCAS Science Pass Rate	MCAS ELA Pass Rate	MCAS Math Pass Rate	MCAS Science Pass Rate
	Grade 4					
Source: MDESE	78.1%	78.1%	NA	60%	67%	NA
Source: Data received for this study	79.9%	79.9%	NA	61.6%	69.7%	NA
	Grade 8					
Source: MDESE	90.0%	59.7%	52.5%	51%	28%	16%
Source: Data received for this study	92.2%	61.5%	54.0%	55.6%	31.6%	17.7%
	Grade 10					
Source: MDESE	93.5%	88.2%	82.7%	70%	72%	54%
Source: Data received for this study	95.2%	89.7%	82.4%	72.6%	76.3%	59.2%
Source for MDESE data is MDESE (n.d., c)						

Table 8: MCAS ELA Pass Rates of LEP Students of Different English Proficiency Levels. BPS, SY2009

	MEPA L1	MEPA L2	MEPA L3	MEPA L4	MEPA L5
	Grade 4				
Source: MDESE	0%	3.0%	20.6%	66.8%	94.9%
Source: Data received for this study	0%	8.6%	20.2%	66.9%	94.7%
	Grade 8				
Source: MDESE	5.3%	16.4%	42.3%	83.0%	89.7%
Source: Data received for this study	5.6%	15.5%	44.2%	83.3%	89.8%
	Grade 10				
Source: MDESE	33.3%	47.6%	58.9%	92.9%	98.6%
Source: Data received for this study	25.0%	50.0%	61.2%	92.6%	98.7%
Source for MDESE data is English Language Learners Subcommittee (2009).					

Table 9: MCAS Math Pass Rates of LEP Students of Different English Proficiency Levels. BPS, SY2009

	MEPA L1	MEPA L2	MEPA L3	MEPA L4	MEPA L5
	Grade 4				
Source: MDESE	6.7%	9.7%	38.0%	75.8%	94.3%
Source: Data received for this study	23.1%	22.2%	40.6%	75.5%	94.2%
	Grade 8				
Source: MDESE	3.8%	13.4%	23.6%	37.8%	60.0%
Source: Data received for this study	3.7%	15.2%	27.1%	39.6%	61.7%
	Grade 10				
Source: MDESE	66.7%	71.8%	66.1%	83.8%	85.7%
Source: Data received for this study	69.2%	75.0%	69.7%	84.7%	86.7%
Source for MDESE data is English Language Learners Subcommittee (2009).					

Another limitation of the study is that, due to budgetary and time constraints, the research team did not collect any additional quantifiable data on ELL programs other than the type of program in which the student was enrolled or by aggregating demographic and outcomes data on students enrolled in those programs. The inclusion of data on the qualifications of ELL teachers, specific instructional strategies used, and other characteristics of ELL programs would have strengthened our findings but was beyond the scope of the project.

Finally, due to lack of availability in SIMS or other state-collected data sources, a number of variables were not included in the analysis for this study whose presence would have strengthened our findings (e.g., prior schooling in home country, parents' level of education). In addition, some variables were considered but ultimately not included because the way in which they were collected or defined was not ideal for use in this study (e.g., immigrant status DOE022, country of origin DOE023).

Methods

1. Literature Review

This study was guided by a review of recent literature on factors affecting the academic performance of ELLS, specifically in terms of achievement tests and dropout; on studies of ELLs using HLM or linear regression models to assess achievement and dropout; and on studies conducted in California and Arizona, two other states that have similar restrictive language laws to Massachusetts'.

2. Data Analysis

After cleaning and compiling the data files, basic frequencies and cross-tabulations were conducted in SPSS. Specific aggregations of categories often responded to the needs expressed by OELL. For example, MEPA SY2009 data were collapsed into three proficiency levels (1-2, 3, and 4-5) at the request of OELL. When there were fewer than 10 students in a group or subgroup for a given indicator, data were suppressed in the report to maintain student confidentiality.

These analyses were conducted for each year SY2006-2009. In the report, we focus the discussion on data findings from SY2009 and highlight

salient trends across time. Appropriate statistical tests – chi-square, t-test, or Fisher's Exact test, with $\alpha = .05$ for all – were used to determine the significance of the differences in outcomes among populations and among LEP students enrolled in schools showing different characteristics and in different types of ELL programs. Effect size was calculated where appropriate.

As noted earlier in this Appendix, the dropout analysis conducted for this report was done in the separate dropout database. Annual dropout rates were determined for students enrolled in middle school and high school grades.[3] For summer dropouts, behavioral, academic (namely MEPA and MCAS), ELL program and school characteristics data from the prior year (the last school year completed) were assigned to the student. For instance, students who dropped out during the summer of 2008 were assigned their SY2008 values for these SY2009 variables. Basic frequencies and cross-tabulations were conducted and statistical significance was determined by running chi-square[4] tests ($\alpha = .05$) and by determining the effect size.

In addition, an in-depth analysis was conducted to explore the impact of student-level characteristics and school environments on individual achievement as measured by MCAS performance in the English Language Arts and Math.[5] We identified hierarchical linear modeling (HLM) as the preferred method of analysis; due to the similarity of educational experiences between students in a particular school, traditional multiple regression techniques would underestimate the correlation between school-level variables and therefore the standard error, likely resulting in spuriously significant relationships. Variables of interest were identified through a review of the literature, the descriptive analyses, and in consultation with OELL.

Six two-level models were tested: MCAS ELA performance for LEPs in SY2009 at elementary, middle, and high school levels and MCAS Math performance for LEPs in SY2009 at elementary, middle, and high school levels. For the MCAS ELA models, elementary grades included grades 4-5, middle school grades included Grades 6-8, and high school grades included Grades 9-12. For MCAS Math models, elementary grades included Grades 3-5, middle school grades included Grades 6-8, and high school grades included Grades 9-12.

Before including all explanatory variables in the models, the intraclass correlation coefficient (ICC) was calculated to verify that a hierarchical model was needed (see Table 47). Next, we checked multicollinearity to determine the model with valid significance levels. Usually, higher correlations among independent variables will result in a higher condition index, and a variable may have to be removed from the model for accurate estimation with significance testing. Within the set of student-level variables, Attendance Rate and Mobility were highly correlated at the elementary and middle school levels. The condition index was also high. Mobility was removed from the model and Attendance Rate was retained because the attendance variable structure (ratio rather than categorical) provides the opportunity for more detailed analysis. Percent Mobility, a school-level variable representing the percentage of the student population that changes schools between October and June of a given school year, was found to be strongly associated with LEP Density. Percent Mobility was removed from the model because LEP Density was considered of more interest to this analysis. Finally, Highly Qualified Teachers, a school-level variable representing the percentage of the teaching staff that is considered highly qualified, was also removed from the analysis, because the structure of the variable biased the analysis towards schools with highly qualified teachers on staff.

Table 10. Variables Considered in HLM Analysis

Variable	Definition	Status
Student-Level Variables		
Attendance Rate	The percentage of school days the student was present at school.	Included in analysis.
Gender	Gender of student.	Included in analysis.
MEPA	MEPA test score from the spring 2009 administration data (in this analysis the actual score was used rather than the categorical variable).	Included in analysis.
In SPED	Student receiving special education services (i.e., student with a disability).	Included in analysis.
In SEI Language Specific	Student enrolled in a Sheltered English Immersion Language Specific program where students all speak the same language and support for students and families is available in that language.	Included in analysis.
In SEI Multilingual	Student enrolled in a Sheltered English Immersion Multilingual program in which students speak different languages.	Included in analysis.
In Non-SEI ELL Program	Student enrolled in Two-Way Bilingual, TBE, or SIFE ELL programs (see Table 1).	Included in analysis.
Not in Program for ELLs	LEP student whose parent has opted out of enrolling their child in an ELL program, or, a LEP student who is otherwise not enrolled in an ELL program. A student not enrolled in an ELL program may or may not also be a student receiving special education services.	Included in analysis.
Mobility	Whether a student changed schools between October and June of a given school year.	Removed due to lack of significance in multiple regression.
School-Level Variables		
Poverty Status	Percentage of the school population that is low-income	Included in analysis.
School Size	Size of school enrollment (see Table 2).	Included in analysis.
Adequate Yearly Progress	Whether a school demonstrated Adequate Yearly Progress in the subject matter (either Math or English as appropriate).	Included in analysis.
LEP Density	Percentage of the school population that is Limited English Proficient.	Included in analysis.
Highly Qualified Teachers	Percentage of core academic classes taught by highly qualified teachers (see Table 2).	Removed due to structure of variable.
Percent Mobility	Percentage of the student population that changed schools between October and June of a given school year.	Removed due to high level of correlation with LEP Density.

The final models at each level of HLM analysis are as follows:

Level 1 model (same for both ELA and Math)***:***

$$Y_{ij} = \beta_{0j} + \beta_{1j} * (Attendance) + \beta_{2j} * (Gender) + \beta_{3j} * (MEPA) + \beta_{4j} * (SPED) + \beta_{5j} * (NonSEI) + \beta_{6j} * (SEISpecific) + \beta_{7j} * (SEIMulti) + \varepsilon_{ij}$$

Level 2 model:

ELA:

$$\beta_{0j}(ELA) = \gamma_{00} + \gamma_{01} * (Poverty) + \gamma_{02} * (SchoolSize) + \gamma_{03} * (AYPELA) + \gamma_{04} * (LEPDensity) + u_{0j}$$

Math:

$$\beta_{0j}(Math) = \gamma_{00} + \gamma_{01} * (Poverty) + \gamma_{02} * (SchoolSize) + \gamma_{03} * (AYPMath) + \gamma_{04} * (LEPDensity) + u_{0j}$$

Complete model:

ELA:

$$Y_{ij}(ELA) = \gamma_{00} + \gamma_{01} * (Poverty) + \gamma_{02} * (SchoolSize) + \gamma_{03} * (AYPELA) + \gamma_{04} * (LEPDensity) + \beta_{1j} * (Attendance) + \beta_{2j} * (Gender) + \beta_{3j} * (MEPA) + \beta_{4j} * (SPED) + \beta_{5j} * (NonSEI) + \beta_{6j} * (SEISpecific) + \beta_{7j} * (SEIMulti) + u_{0j} + \varepsilon_{ij}$$

Math:

$$Y_{ij}(Math) = \gamma_{00} + \gamma_{01} * (Poverty) + \gamma_{02} * (SchoolSize) + \gamma_{03} * (AYPMath) + \gamma_{04} * (LEPDensity) + \beta_{1j} * (Attendance) + \beta_{2j} * (Gender) + \beta_{3j} * (MEPA) + \beta_{4j} * (SPED) + \beta_{5j} * (NonSEI) + \beta_{6j} * (SEISpecific) + \beta_{7j} * (SEIMulti) + u_{0j} + \varepsilon_{ij}$$

[1] Included with the SIMS data was also data from BPS with date of entry to BPS, date of LEP and FLEP designation, and LEP status.

[2] Where possible, we compared data received for this study to BPS data reports by MDESE. The proportion of LEP students scoring at each MEPA performance level is nearly identical when comparing data from MDESE (2009d) (23.6% at MEPA levels 1-2, 31.9% at MEPA level 3, 44.4% at MEPA levels 4-5) to the data received for this study (23.6% at MEPA levels 1-2, 32.0% at MEPA level 3, 44.4% at MEPA levels 4-5). MCAS and dropout comparisons are also presented in this appendix.

[3] MDESE does not include middle school students in its reporting of annual dropout rates. The BPS Office of Research, Assessment & Evaluation (RAE) uses its own data and methodology (BPS, 2011) when reporting annual dropout rates. While, like MDESE, it adjusts for dropouts who have returned to school the following year, RAE does not include summer dropouts in its calculations. Therefore, it is likely that dropout rates reported for this study differ from dropout rates reported by RAE.

[4] In this report, Fisher's exact test was used when a chi-square test could not be run due to small sample sizes. There were few instances when this was necessary.

[5] A dropout model was also developed, but the model did not converge.

APPENDIX 2: Additional Tables and Figures for Chapters III to VIII

Additional Tables for Chapter III

Table 3.1. Characteristics of English Proficient Students, K-12. BPS, SY2009

	English Proficient	English Proficient		
		NES	NSOL EP	NSOL FLEP
Total Enrollment	47,267	36,168	7,715	3,384
Gender (% Male)	51.5%	52.1%	50.5%	47.0%
Low Income[1]	72%	69.1%	78.8%	85.7%
Race				
% Asian	7.0%	2.9%	19.0%	23.1%
% Black	42.4%	50.1%	17.7%	15.6%
% Latino	32.9%	26.2%	55.7%	53.5%
% Multiracial	1.9%	2.3%	0.7%	0.6%
% Native American	0.5%	0.6%	0.1%	0.35
% Pacific Is / Hawaiian	0.1%	0.1%	0.1%	0.1%
% White	15.2%	17.8%	6.7%	6.9%
First Language				
English	76.5%	100%	-	-
Spanish	13.0%	NA	54.9%	56.1%
Haitian Creole	2.0%	NA	8.8%	8.2%
Chinese Languages	2.5%	NA	9.7%	13.3%
Vietnamese	2.0%	NA	8.6%	8.7%
Cape Verdean Creole	1.2%	NA	5.3%	4.1%
Portuguese	0.5%	NA	2.2%	2.2%
Somali	0.4%	NA	1.7%	1.5%
Other languages	1.8%	NA	8.7%	6.0%
Mobile [2]	8.0%	8.5%	8.1%	2.5%
SWD [3]	19.5%	22.3%	13.4%	8.7%

Notes: [1] Eligible for free or reduced price lunch; [2] Students who changed schools between October and June of the school year; [3] Includes students age 6+, K-12.

Table 3.2. Characteristics of English Language Learners, K-12[4]. BPS, SY2006-SY2009

	SY2006	SY2007	SY2008	SY2009	% Change SY2006-SY2009
Total LEP Enrollment	10,405	10,514	10,927	11,690	12.3%
Male	5,546	5,636	5,922	6,266	13.0%
%	53.3%	53.6%	54.2%	53.6%	
Low income[1]	8,855	8,790	9,168	10,205	15.3%
%	85.1%	83.6%	83.9%	87.3%	
Native Language					
Spanish	6,056	6,130	6,261	6,617	9.3%
%	58.2%	58.3%	57.3%	56.6%	
Cape Verdean Creole	718	736	820	959	33.5%
%	6.9%	7.0%	7.5%	8.2%	
Chinese languages	843	883	896	912	8.2%
%	8.1%	8.4%	8.2%	7.8%	
Haitian Creole	1,020	957	1,038	1,052	3.2%
%	9.8%	9.1%	9.5%	9.0%	
Portuguese	271	263	262	257	-4.9%
%	2.6%	2.5%	2.4%	2.2%	
Somali	177	221	240	245	38.8%
%	1.7%	2.1%	2.2%	2.1%	
Vietnamese	499	547	590	713	42.8%
%	4.8%	5.2%	5.4%	6.1%	
Other languages	822	778	830	947	15.2%
%	7.9%	7.4%	7.6%	8.1%	
Mobile	1,467	1,272	1,410	1,508	2.8%
%	14.1%	12.1%	12.9%	12.9%	
SWD[2]	2,060	2,124	2,153	2,186	6.1%
%	19.8%	20.2%	19.7%	18.7%	
English Proficiency Level[3 4]	5,361	5,718	5,847	6,513	
MEPA L1	1,276	1,235	1,123	1,075	-15.8%
%	23.8%	21.6%	19.2%	16.5%	
MEPA L2	777	869	801	788	1.4%
%	14.5%	15.2%	13.7%	12.1%	
MEPA L3	1,657	1,715	1,865	2,201	32.9%
%	30.9%	30.0%	31.9%	33.8%	
MEPA L4	1,651	1,904	2,058	2,455	48.7%
%	30.8%	33.3%	35.2%	37.7%	

Notes: [1] Eligible for free or reduced price lunch; [2] Includes students ages 6+ in K-12; [3] Values are for MEPA test-takers only. In 2009, the Massachusetts Department of Elementary and Secondary Education increased the number of categories representing the MEPA performance levels from 4 to 5. We report here the values of the pre-2009 4-category MEPA performance levels in order to facilitate the comparison across time. [4] In SY2006-2008, LEP students in grades K-2 were not tested on the MEPA but they were tested in SY2009. In order to show a more accurate comparison, we include here only LEP students in Grades 3-12 for MEPA performance levels.

Additional Tables for Chapter VI

Table 6.1. Proportion of MEPA Test-Takers. LEPs in and Not in ELL Programs, Grades 3-12. BPS SY2006-SY2009

	SY2006	SY2007	SY2008	SY2009
Total LEPs Gr 3-12	6,611	6,852	6,948	7,657
MEPA Test-Takers	5,361	5,718	5,847	6,515
% taking MEPA test	81.1%	83.5%	84.2%	85.1%
Total LEPs Gr 3-12 in ELL Programs	6,116	4,242	4,369	4,750
MEPA Test-takers	4,949	3,596	3,734	4,127
% taking MEPA test	80.9%	84.8%	85.5%	86.9%
Total LEPs Gr 3-12 Not in ELL Programs	495	2,610	2,579	2,907
MEPA Test-takers	412	2,122	2,113	2,388
% taking MEPA test	83.2%	81.3%	81.9%	82.1%

Note: [1] The MEPA test was not administered to LEPs in grades PK-2 in SY2006, SY2007 and SY2008. For ease of comparison across time, the population of students in this table is that in grades 3-12.

Table 6.2. English Proficiency Levels of LEP Students in Different ELL Programs, K-12. BPS, SY2009

	N MEPA Test-Takers	MEPA Levels 1 & 2	MEPA Level 3	MEPA Levels 4 & 5
All LEPs	9,351	23.6%	32.0%	44.4%
Not in an ELL Program	3,623	11.0%	30.4%	58.6%
In ELL Programs	5,728	31.6%	32.9%	35.5%
In SEI	5,002	30.6%	33.9%	35.5%
SEI Multilingual	560	31.1%	36.3%	32.7%
SEI Language Specific	4,442	30.6%	33.6%	35.8%
In Two-Way Bilingual	346	20.8%	30.6%	48.6%
In TBE	142	14.8%	31.7%	53.5%
In SIFE	238	76.9%	17.2%	5.9%
SIFE Multilingual	13	38.5%	46.2%	15.4%
SIFE Language Specific	225	79.1%	15.6%	5.3%
SEI Language Specific Programs	4,442	30.6%	33.6%	35.8%
Spanish	2,705	31.4%	32.8%	35.7%
Haitian Creole	447	23.5%	39.6%	36.9%
Chinese	367	25.1%	27.5%	47.4%
Cape Verdean Creole	499	40.3%	36.5%	23.2%
Vietnamese	244	28.7%	34.4%	36.9%
Portuguese	108	19.4%	33.3%	47.2%
Somali	72	27.8%	33.3%	38.9%
SIFE Language Specific Programs	225	79.1%	15.6%	5.3%
Spanish	108	76.9%	15.7%	7.4%
Haitian Creole	66	89.4%	10.6%[1]	0%
Cape Verdean Creole	34	76.5%	14.7%[1]	8.8%[1]
Somali	17	58.8%	35.3%[1]	5.9%[1]

Note: [1] Represent less than 10 students.

Table 6.3. English Proficiency Levels of LEP Students, Grades 3-12. BPS, SY2006-SY2009

	SY2006	SY2007	SY2008	SY2009
Elementary School				
MEPA L1	13.4%	12.6%	11.6%	11.1%
MEPA L2	12.9%	12.5%	12.5%	11.0%
MEPA L3	28.7%	28.1%	30.4%	32.7%
MEPA L4	45.0%	46.8%	45.5%	45.2%
Middle School				
MEPA L1	31.0%	28.5%	22.5%	20.4%
MEPA L2	18.2%	23.4%	16.0%	13.8%
MEPA L3	31.8%	29.6%	32.5%	33.4%
MEPA L4	18.9%	18.5%	29.0%	32.4%
High School				
MEPA L1	33.8%	29.8%	25.8%	20.0%
MEPA L2	14.4%	14.0%	13.5%	11.9%
MEPA L3	33.5%	32.6%	33.3%	35.7%
MEPA L4	18.3%	23.6%	27.4%	32.4%

Note: In order to facilitate a comparison of LEP students' performance on MEPA from SY2006-SY2009, we include only students in Grades3-12 and have converted spring 2009 MEPA performance levels to the pre-2009 scale.

Additional Tables for Chapter VII

Table 7.1. Annual High School Dropout Rates of Students of Different Language Proficiencies. BPS, SY2009

	All BPS	LEP	ENGLISH PROFICIENT	English Proficient		
				NES	NSOL EP	FLEP
High School	6.9%	6.6%	7.0%	7.5%	6.1%	4.9%
Note: The differences in the annual high school dropout rate of LEPs as compared to NES, NSOL EP, and FLEP are not significant.						

Table 7.2. Demographic Composition of LEP Dropouts and LEP Non-Dropouts in High School. BPS, SY2009

	All LEP Students in High School[1]			
	N Non-Dropouts	Composition of Non-Dropouts	N Dropouts	Composition of Dropouts
All	2,855	100%	201	100%
Male	1,532	53.7%	134	66.7%
Female	1,323	46.3%	67	33.3%
Low income[2]	2,165	75.8%	85	42.3%
Not Low Income	690	24.2%	116	57.7%
Native Language				
Spanish	1,374	48.1%	127	63.2%
Cape Verdean Creole	412	14.4%	21	10.4%
Chinese languages	230	8.1%	8	4.0%
Haitian Creole	431	15.1%	26	12.9%
Portuguese	62	2.2%	5	2.5%
Somali	83	2.9%	5	2.5%
Vietnamese	119	4.2%	4	2.0%
Other languages	144	5.0%	5	2.5%
Mobile	494	17.6%	45	23.8%
Stable	2,318	82.4%	144	76.2%
SWD	408	14.3%	34	16.9%
Not SWD	2,447	85.7%	167	83.1%
English Proficiency Level				
MEPA L1	503	20.6%	51	34.7%
MEPA L2	302	12.4%	24	16.3%
MEPA L3	867	35.5%	49	33.3%
MEPA L4	769	31.5%	23	15.6%
Notes: [1] Comparing LEPs who dropped out to those who did not at the high school level, differences in demographic composition were found to be significant in terms of gender (p=.000, minimal effect size), income (p=.000,small effect size), stability (p=.030, minimal effect size), and English proficiency level (p=.000,small effect size).[2] Eligible for free or reduced price lunch.				

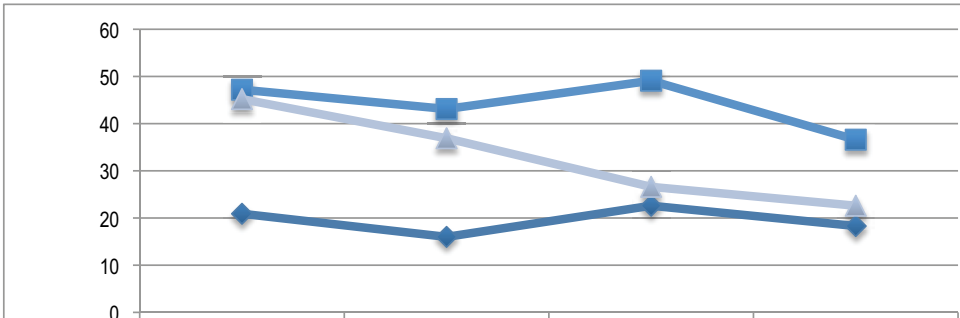
Table 7.3. Attendance, Out-of-School Suspension and Retention Rates for LEP of Different English Proficiency Levels in ELL programs, K-12. BPS, 2009

ELL Programs	LEP	LEP MEPA Test Takers		
		Levels 1 & 2	Level 3	Levels 4 & 5
Median Attendance Rate[1]				
Pass Rate of English Proficient	94.4%			
All LEPs	95.5%	94.4%	95.5%	96.7%
Not in an ELL Program	95.0%	93.8%	94.9%	96.6%
In ELL Program	95.6%	94.4%	95.6%	96.7%
SEI	95.6%	94.4%	95.6%	96.7%
Multilingual	95.0%	94.2%	96.1%	96.7%
Language Specific (All)	95.6%	94.4%	95.6%	96.7%
Two-Way	95.6%	92.7%	95.6%	96.1%
TBE	97.2%	95.6%	97.8%	97.2%
SIFE	95.0%	95.0%	95.0%	97.5%
Out-of-School Suspension[2]				
Rate of English Proficient	6.3%			
All LEPs	3.8%	3.9%	3.8%	3.7%
Not in an ELL Program	4.8%	5.3%	4.7%	4.6%
In ELL Program	3.1%	3.6%	3.2%	2.7%
SEI	3.2%	3.7%	3.4%	2.9%
Multilingual	4.9%	5.2%	3.4%	6.6%
Language Specific (All)	2.9%	3.5%	3.4%	2.5%
Two-Way	2.8%	5.6%	0.9%	2.4%
TBE	0%	0%	0%	0%
SIFE	2.9%	2.7%	4.9%	0%
Retention Rate (SY2008-SY2009)[3]				
Rate of English Proficient	6.5%			
All LEPs	9.5%	18.5%	9.1%	3.5%
Not in an ELL Program	7.1%	9.1%	6.2%	3.8%
In ELL Program	11.5%	21.5%	10.9%	3.3%
SEI	11.0%	17.7%	11.3%	3.6%
Multilingual	11.1%	9.2%	11.4%	8.3%
Language Specific (All)	11.0	18.9%	11.3%	3.1%
Two-Way	3.6%	12.8%	1.9%	1.8%
TBE	7.5%	38.1%	4.4%	0%
SIFE	38.0%	44.3%	28.9%	0%

Notes: [1] Differences in the median attendance rate between LEP students in and not in ELL programs were not statistically significant. Among LEP students in different types of ELL programs, difference between the following groups were significant: TBE/not in ELL (p=.022); SEI/Two-Way Bilingual (p=.002); SIFE/Two-Way Bilingual (p=.000); TBE/SEI (p=.044); TBE/SIFE (p=.006); and SEI multilingual/SEI language specific (p=.019). [2] Differences in the out-of-school suspension rate between students in and not in ELL programs were statistically significant (p=.000) but with minimal effect size. Among LEP students in different types of ELL programs, difference between the following groups were significant: SEI/not in ELL (p=.000); TBE/not in ELL (p=.006); TBE/SEI (p=.015); and SEI multilingual/SEI language specific (p=.006), all with minimal effect size [3] Differences in the retention rate between students in and not in ELL programs were statistically significant (p=.000) but with minimal effect size. Among LEP students in different types of ELL programs, difference between the following groups were significant: SEI/not in ELL (p=.000, minimal effect size); Two-Way Bilingual/not in ELL (p=.017, minimal effect size); SIFE/not in ELL (p=.000, small effect size);SEI/Two-Way Bilingual (p=000, minimal effect size); and SIFE/Two-Way Bilingual (p=.000, medium effect size).

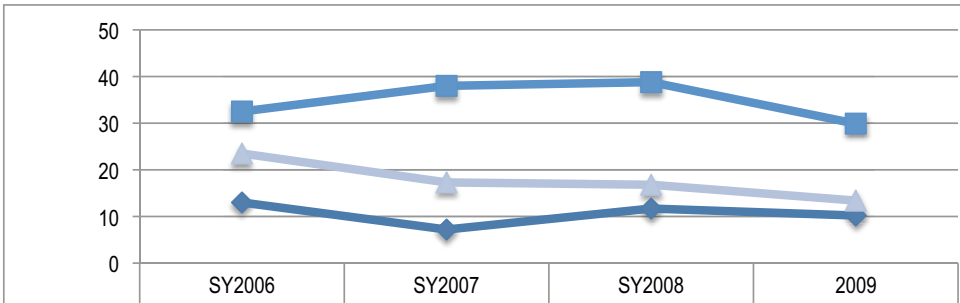
Additional Tables and Figures for Chapter VIII

Figure 8.1. MCAS ELA Pass Rate Gaps between LEPs and EPs, Grades 4, 8 and 10. BPS, SY2006-SY2009



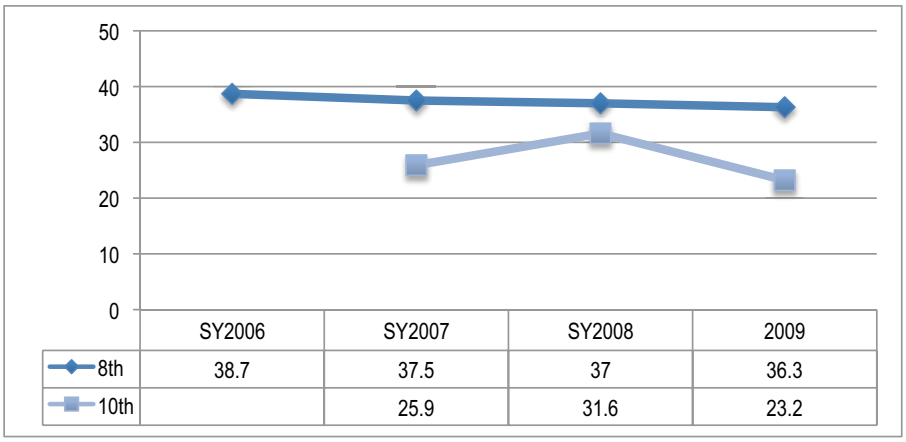
	SY2006	SY2007	SY2008	SY2009
4th	20.9	16	22.6	18.3
8th	47.2	43.1	49.1	36.6
10th	45.2	36.9	26.6	22.6

Figure 8.2. MCAS Math Pass Rate Gaps between LEPs and EPs, Grades 4, 8 and 10. BPS, SY2006-SY2009



	SY2006	SY2007	SY2008	2009
4th	13	7.2	11.7	10.2
8th	32.5	38	38.8	29.9
10th	23.5	17.3	16.8	13.4

Figure 8.3. Science Pass Rate Gaps between LEPs and EPs, Grades 8 and 10. BPS, SY2006-SY2009



	SY2006	SY2007	SY2008	2009
8th	38.7	37.5	37	36.3
10th		25.9	31.6	23.2

Table 8.1. MCAS ELA Pass Rates for LEP Students at Various English Proficiency Levels in Different Types of ELL Programs. BPS, SY2009

ELL Programs	ELA Pass Rates						
	LEP	LEP MEPA/MCAS Test Takers					
		Levels 1 & 2		Level 3		Levels 4 & 5	
Elementary[2]							
Pass Rate of English Proficient	84.0%						
		N	%	N	%	N	%
LEP	64.9%	97	12.4%	311	31.2%	986	80.6%
LEP Not in an ELL Program	70.6%	22	13.6% [1]	142	33.8%	535	82.6%
In ELL Program	59.0%	75	12.0% [1]	169	29.0%	451	78.3%
In SEI	58.6%	54	7.4% [1]	150	30.7%	397	76.6%
Multilingual	52.6%	-	-	-	-	15	66.7%
Language Specific (All)	58.8%	54	7.4%[1]	147	31.3%	382	77.0%
In Two-Way Bilingual	81.4%	1	-	9	-	48	91.7%
In SIFE	29.7%	20	20.0% [1]	10	10.0% [1]	-	-
Middle School[3]							
Pass Rate of English Proficient	90.3%						
		N	%	N	%	N	%
LEP	59.0%	219	9.6%	483	41.4%	751	85.1%
LEP Not in an ELL Program	69.7%	36	16.7% [1]	212	46.7%	472	85.6%
In ELL Program	47.8%	183	8.2%	271	37.3%	279	84.2%
In SEI	48.0%	136	8.8%	251	36.3%	241	82.6%
Multilingual	69.0%	-	-	14	71.4%	21	85.7%
Language Specific (All)	46.5%	129	8.5%	237	34.2%	220	82.3%
In Two-Way Bilingual	89.3%	NA	NA	1	-	27	92.6%
In TBE	84.0%	-	-	11	81.8% [1]	-	-
In SIFE	7.5% [1]	42	0%	8	-	3	-
High School[4]							
Pass Rate of English Proficient	95.2%						
		N	%	N	%	N	%
LEP	72.6%	56	44.6%	201	61.2%	198	94.9%
LEP Not in an ELL Program	75.0%	9	-	35	51.4%	57	94.7%
In ELL Program	71.9%	47	42.6%	166	54.3%	141	95.0%
In SEI	72.4%	31	35.1%	147	51.6%	131	95.4%
Multilingual	66.7%	9	-	33	45.7%	23	94.0%
In TBE	93.5%	8	-	13	92.3%	10	90
In SIFE	18.8%[1]	8	-	6	-	0	-

Note: [1] Represents less than 10 students. [2] Elementary includes Grades 4-5. Among LEPs in elementary school grades scoring at MEPA levels 1-2, differences in MCAS ELA pass rates were not found to be significant when comparing students of various ELL program statuses. Among LEPs in elementary school grades scoring at MEPA level 3, differences in MCAS ELA pass rates were also not found to be significant when comparing students of various ELL program statuses. Among LEPs in elementary school grades scoring at MEPA levels 4-5, differences in MCAS ELA pass rates were found to be significant when comparing students in SEI to students in TBE (p=.017, small effect size) and when comparing students in SEI to students not in am ELL program (p=.022, minimal effect size). [3] Middle school includes Grade 6-8. Among LEPs in middle school grades scoring at MEPA levels 1-2, differences in MCAS ELA pass rates were found to be significant when comparing students in SEI to students in TBE (p=.009, medium effect size). Among LEPs in middle school grades scoring at MEPA level 3, differences in MCAS ELA pass rates were found to be significant when comparing students in ELL programs to students not in ELL programs (p=.037, medium effect size), students in SEI to students in TBE (p=.003, small effect size), students in SEI to students not in ELL programs (p=.023, small effect size), and students in SEI multilingual to students in SEI language specific programs (p=.005, small effect size). Among LEPs in middle school grades scoring at MEPA levels 4-5, differences in MCAS ELA pass rates were not found to be significant when comparing students of various ELL program statuses. [4] High school includes Grade 10. Among LEPs in high school scoring at MEPA levels 1-2, differences in MCAS ELA pass rates were found to be significant when comparing students in SEI to students in TBE (p=.001, large effect size). Among LEPs in high school scoring at MEPA level 3, differences in MCAS ELA pass rates were found to be significant when comparing students in SEI to students in TBE (p=.033, small effect size). Among LEPs in high school scoring at MEPA levels 4-5, differences in MCAS ELA pass rates were not found to be significant when comparing students of various ELL program statuses.

Table 8.2. MCAS Math Pass Rates for LEP Students at Various English Proficiency Levels in Different Types of ELL Programs. BPS, SY2009

ELL Programs	Math Pass Rates						
	LEP	LEP MEPA/MCAS Test Takers					
		Levels 1 & 2		Level 3		Levels 4 & 5	
Elementary[2]							
Pass Rate of English Proficient	76.3%						
		N	%	N	%	N	%
LEP	61.8%	107	22.4%	321	35.2%	988	75.1%
LEP Not in an ELL Program	67.2%	22	13.6%[1]	142	35.2%	534	78.5%
In ELL Program	56.5%	85	24.7%	179	35.2%	454	71.1%
In SEI	55.2%	61	16.4%	160	35.6%	400	69.5%
Multilingual	52.2%	4	-	3	-	15	-
Language Specific (All)	55.3%	57	14.0%[1]	157	35.0%	385	70.1%
In Two-Way Bilingual	74.6%	1	-	9	-	48	83.3%
In SIFE	50.0%	23	47.8%	10	30.0%[1]	6	-
Middle School[3]							
Pass Rate of English Proficient	65.5%						
		N	%	N	%	N	%
LEP	37.7%	295	14.2%	494	25.3%	751	56.6%
LEP Not in an ELL Program	45.9%	35	22.9% [1]	212	26.9%	473	57.7%
In ELL Program	30.3%	260	13.1%	282	24.1%	278	54.7%
In SEI	29.4%	206	14.6%	261	21.8%	241	52.7%
Multilingual	38.8%	11	9.1%	17	23.5%	21	66.7%
Language Specific (All)	28.7%	195	14.9%	244	21.7%	220	51.4%
In Two-Way Bilingual	59.3%	0	-	1	-	26	61.5%
In TBE	92.3%	5	-	12	91.7%	8	-
In SIFE	1.6%[1]	49	0%	8	-	3	-
High School[4]							
Pass Rate of English Proficient	89.7%						
		N	%	N	%	N	%
LEP	76.3%	57	73.7%	208	69.7%	193	85.5%
LEP Not in an ELL Program	69.1%	9	-	39	56.4%	55	78.2%
In ELL Program	78.7%	48	72.9%	169	72.8%	138	88.4%
In SEI	79.2%	35	74.3%	150	73.3%	128	87.5%
Multilingual	91.2%	7	-	34	82.4%	23	100%
Language Specific (All)	76.1%	28	67.9%	116	70.7%	105	84.8%
In TBE	100%	8	-	13	100%	10	100%
In SIFE	15.4%[1]	5	-	6	-	0	NA

Note: [1] Represents less than 10 students. [2] Elementary includes Grades 4-5. Among LEPs in elementary school grades scoring at MEPA levels 1-2, differences in MCAS Math pass rates were found to be significant when comparing students in SEI to students in SIFE (p=.003, medium effect size). Among LEPs in elementary school grades scoring at MEPA level 3, differences in MCAS Math pass rates were not found to be significant when comparing students of various ELL program statuses. Among LEPs in elementary school grades scoring at MEPA levels 4-5, differences in MCAS Math pass rates were found to be significant when comparing students in ELL programs to students not in ELL programs (p=.008, minimal effect size), students in SEI to students in two-way bilingual programs (p=.046, minimal effect size), and students in SEI to students not in ELL programs (p=.002, small effect size). [3] Middle school includes Grades 6-8. Among LEPs in middle school grades scoring at MEPA levels 1-2, differences in MCAS Math pass rates were found to be significant when comparing students in SEI to students in TBE (p=.003, small effect size) and students in SEI to students in SIFE (p=.004, small effect size). Among LEPs in middle school grades scoring at MEPA level 3, differences in MCAS Math pass rates were found to be significant when comparing students in SEI to students in TBE (p=.000, medium effect size). Among LEPs in middle school grades scoring at MEPA levels 4-5, differences in MCAS Math pass rates were found to be significant when comparing students in SEI to students in TBE (p=.008, small effect size). [4] High school includes Grade 10. Among LEPs in high school scoring at MEPA levels 1-2, differences in MCAS Math pass rates were found to be significant when comparing students in SEI to students in SIFE (p=.015, medium effect size). Among LEPs in high school scoring at MEPA level 3, differences in MCAS Math pass rates were found to be significant when comparing students in ELL programs to students not in ELL programs (p=.045, small effect size), students in SEI to students in TBE (p=.039, small effect size),students in SEI to students in SIFE (p=.000, medium effect size), and students in SEI to students not in ELL programs (p=.040, small effect size). Among LEPs in high school scoring at MEPA levels 4-5, differences in MCAS Math pass rates were found to be significant when comparing students in SEI multilingual to students in SEI language specific programs (p=.045, small effect size).

Table 8.3. MCAS Science Pass Rates for LEP Students at Various English Proficiency Levels in Different Types of ELL Programs. BPS, SY2009

ELL Programs	Science Pass Rates						
	LEP	LEP MEPA/MCAS Test Takers					
		Levels 1 & 2		Levels 3		Levels 4 & 5	
Elementary[2]							
Pass Rate of English Proficient	72.0%						
		N	%	N	%	N	%
LEP	45.1%	54	13.0%[1]	185	20.5%	441	59.4%
LEP Not in an ELL Program	50.0%	11	27.3%[1]	86	23.3%	249	60.6%
In ELL Program	39.9%	43	9.3%[1]	99	18.2%	192	57.8%
In SEI	39.5%	27	0%	88	18.2%	176	56.8%
Multilingual	42.9%[1]	0	NA	2	-	11	54.5%
Language Specific (All)	39.4%	27	0%	86	18.6%	165	57.0%
In Two-Way Bilingual	54.5%	1	-	6	-	14	71.4%
In SIFE	30.4%[1]	15	26.7%[1]	5	-	2	-
Middle School[3]							
Pass Rate of English Proficient	54.0%						
		N	%	N	%	N	%
LEP	17.7%	91	3.3%[1]	139	13.7%	156	30.8%
LEP Not in an ELL Program	20.0%	11	9.1%[1]	33	15.2% [1]	60	26.7%
In ELL Program	16.8%	80	2.5%[1]	106	13.2%	96	33.3%
In SEI	15.1%	64	0%	96	12.5%	88	29.5%
Multilingual	18.8%	3	-	6	-	7	-
Language Specific (All)	14.8%	61	0%	90	12.2%	81	29.6%
In Two-Way Bilingual	0%	0	NA	0	NA	2	-
In TBE	71.4%	2	-	6	-	6	-
In SIFE	0%	14	0%	4	-	0	NA
High School[4]							
Pass Rate of English Proficient	82.4%						
		N	%	N	%	N	%
LEP	59.2%	61	37.7%	213	52.1%	194	78.9%
LEP Not in an ELL Program	51.6%	9	-	40	42.5%	56	69.6%
In ELL Program	61.8%	52	34.6%	173	54.3%	138	82.6%
In SEI	61.5%	37	35.1%	155	51.6%	128	82.0%
Multilingual	58.8%	9	-	35	45.7%	22	81.8%
Language Specific (All)	62.2%	28	32.1% [1]	120	53.3%	106	82.1%
In TBE	83.9%	8	-	13	92.3%	10	90.0%[1]
In SIFE	15.4%[1]	7	-	5	-	0	NA

Note: [1] Represents less than 10 students. [2] Elementary grades include Grade 5 only. Among LEPs in elementary school grades scoring at MEPA levels 1-2, differences in MCAS Science pass rates were found to be significant when comparing students in SEI to students in SIFE (p=.012, medium effect size) and students in SEI to students not in ELL programs (p=.020, medium effect size). Among LEPs in elementary school grades scoring at MEPA level 3, differences in MCAS Science pass rates were not found to be significant when comparing students of various ELL program statuses. Among LEPs in elementary school grades scoring at MEPA levels 4-5, differences in MCAS Science pass rates were not found to be significant when comparing students of various ELL program statuses. [3] Middle school grades include Grade 8 only. Among LEPs in middle school grades scoring at MEPA levels 1-2, differences in MCAS Science pass rates were found to be significant when comparing students in SEI to students in TBE (p=.000, large effect size). Among LEPs in middle school grades scoring at MEPA level 3, differences in MCAS Science pass rates were not found to be significant when comparing students of different ELL program statuses. Among LEPs in middle school grades scoring at MEPA levels 4-5, differences in MCAS Science pass rates were found to be significant when comparing students in SEI to students in TBE (p=001, medium effect size). [4] High school grades include Grade 10 only Among LEPs in high school scoring at MEPA levels 1-2, differences in MCAS Science pass rates were not found to be significant when comparing students of various ELL program statuses. Among LEPs in high school scoring at MEPA level 3, differences in MCAS Science pass rates were found to be significant when comparing students in SEI to students in TBE (p=.007, small effect size). Among LEPs in high school scoring at MEPA levels 4-5, differences in MCAS Science pass rates were found to be significant when comparing students in ELL programs to students not in ELL programs (p=.045,small effect size).

APPENDIX 3: Characteristics and Outcomes of LEP Students with Disabilities

This appendix presents additional data on LEP students with disabilities (LEP-SWD).

Table 1. Characteristics of the LEP-SWD[1] Enrollment, K-12. BPS, SY2009

	All LEPs	All LEP-SWD	LEP-SWD[3] in ELL Program	LEP-SWD[3] Not in ELL Program
Total Enrollment	10,957	2,052	708	1,344
Male	53.8%	66.2%	64.1%	67.3%
Low income	87.5%	91.6%	94.5%	90.1%
Native Language				
Spanish	56.8%	71.5%	81.6%	66.2%
Cape Verdean Creole	8.5%	3.4%	2.3%	4.0%
Chinese Languages	7.8%	5.5%	7.5%	4.4%
Haitian Creole	9.2%	5.2%	2.3%	6.7%
Portuguese	2.2%	1.8%	1.0%[2]	2.2%
Somali	2.1%	1.5%[2]	1.1%[2]	1.6%
Vietnamese	5.6%	4.4%	3.0%	5.1%
Other Languages	7.9%	6.8%	1.3%[2]	9.7%
Mobility	13.0%	7.0%	5.8%	7.7%

Notes: [1]LEP-SWD includes only students ages 6+ in K-12; [2] Represents less than 10 students. [3] The demographic differences between LEP-SWDs in ELL programs and those who are significant in the case of income (p= .001, but with minimal effect size) and with respect to native language. The differences in the native language composition of the two groups is significant in the proportion of Spanish (p<.000), Cape Verdean Creole (p=.035), Chinese (p=.003), Haitian Creole (p=.000), Vietnamese (p=.023) and other languages (p<.000) although in all cases the effect size is small or minimal.

Table 2. Participation of LEP-SWDs in MEPA, K-12. BPS, SY2009

Total LEP-SWD	2052
LEP-SWD test-takers	77.5% (1590)
Not in ELL program	71.4% (959/1344)
In ELL program	89.1% (631/708)
Note: LEP-SWD includes only students ages 6+ in K-12.	

Table 3. English Proficiency Level of LEP-SWDs as Measured by MEPA, K-12. BPS, SY2009

	MEPA Levels 1 & 2	MEPA Level 3	MEPA Levels 4 & 5
All LEP-SWD	22.6%	42.1%	35.2%
Not in ELL program	14.1%	42.9%	43.1%
In ELL program	35.7%	41.0%	23.3%
Notes: LEP-SWD includes only students ages 6+ in K-12. The difference in language proficiency levels of LEP-SWDs in ELL programs as compared to those not in ELL programs is significant (p=.000, small effect size).			

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Table 4. MCAS ELA and Math Performance. BPS, SY2009

	MCAS ELA[2]		MCAS Math[3]	
	Test-takers	**Pass Rate**	**Test-takers**	**Pass rate**
4th Grade				
All LEP	719	61.5%	743	69.7%
All SWD	838	44.6%	845	51.8%
LEP-SWD	**185**	**31.4%**	**184**	**50.0%**
EP-SWD[1]	653	48.4%	661	52.3%
8th Grade				
All LEP	378	55.8%	414	31.6%
All SWD	783	69.3%	792	23.5%
LEP-SWD	**90**	**48.9%**	**96**	**20.8%**
EP-SWD[1]	693	72.0%	696	23.9%
10th Grade				
All LEP	453	70.9%	494	76.3%
All SWD	553	75.6%	548	66.2%
LEP-SWD	**61**	**55.7%**	**62**	**56.5%**
EP-SWD[1]	492	78.0%	486	67.5%

Note: [1] We abbreviate English proficient students with disabilities as EP-SWD. [2] The differences in MCAS ELA pass rates among LEP-SWDs and EP-SWDs in 4th, 8th, and 10th grade are significant (p=.000,small effect size). [3] The differences in MCAS Math pass rates among LEP-SWDs and EP-SWDs in 4th, 8th, and 10th grade are not significant.

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Table 5. Annual High School Dropout Rates. BPS, SY2009

	High School	
	N of Dropouts	**Dropout Rate[1]**
All LEP	201	6.6%
All SWD	344	9.6%
LEP-SWD	**34**	**7.7%**
EP-SWD[1]	310	9.9%

Note: [1] The difference in the annual high school dropout rate between LEP-SWD and EP-SWD students is not significant. [2] We abbreviate English proficient students with disabilities as EP-SWD.

APPENDIX 4: Additional HLM Results

A discussion of our HLM analyses of MCAS scores and student–level characteristics and school environmental factors is presented in 'In Depth: Using Hierarchical Linear Modeling (HLM) To Determine the Relative Importance of Individual and School Level Factors in LEP Students' ELA and Math MCAS Outcomes' (see Chapter VIII). This appendix supplements that discussion by providing additional information from existing literature and by presenting the results of the HLM analyses in more detail.

Existing Literature

Using HLM to analyze educational outcomes for ELL students is a common approach in existing research. The rationale for using HLM to study outcomes for ELLs is the range in approaches to ELL and LEP programs from school to school and district to district. Even within the HLM research on LEP students, there are several different approaches. The most common approach is evaluating student outcomes in the context of student-level and school-level variables, including ELL/LEP placement as a student-level covariate (e.g. Callahan, Wilkinson, & Muller, 2010; Brown et al., 2010; Wang, Niemi, & Wang, 2007).

While the HLM research on ELL students is far from exhaustive, there are several factors that have emerged as significant when analyzing educational outcomes for these students. The literature using a two-level linear model including student and school level factors highlights the following significant student level variables which were also found to be significant in our study: gender (Brown, Nguyen, and Stephenson, 2010; Rumberger and Thomas, 2000; Callahan, Wilkinson, & Muller, 2010; Wang et al., 2007); language proficiency (Dawson & Williams, 2008; Wang et al., 2007, Hao & Bonstead-Bruns, 1998); and being designated as a student with disabilities (Wang et al., 2007). Attendance, a behavioral variable, was also been found to be significant (Rumberger, 1995; Rumberger & Palardy, 2005; Rumberger & Thomson, 2000). All of these factors were considered in developing the HLM models for this analysis. The literature typically treats program participation as an individual level variable and most frequently compares between two different types of ELL programs (SEI, TBE, 2-way) or two different intensities of treatment (ESL and ELL program). In this study we compared the educational attainment of LEP students in ELL programs with that of LEP students in general education.

The literature also identifies several school level variables that are consistently statistically significant in two-level linear models. In particular, existing literature highlights the following significant school-level variables that were also found to be significant in our study: school size (Werblow & Duesbery, 2009; Wang et al. 2007; Rumberger & Palardy, 2005; Lee & Smith, 1999; Lee & Bryk, 1989), school poverty level (Werblow & Duesbery, 2009; Braun et al, 2006; Lee & Smith, 1999, Hao & Bonstead-Bruns, 1998), LEP density (Werblow & Duesbery, 2009), and proportion of mobile students (Rumberger & Palardy, 2005; Rumberger & Thomas, 2000). School quality variables are also mentioned in the literature and found significant in our study, such as the percentage of teachers that are highly qualified/percentage of teachers that are licensed in their subject (Munoz & Chang, 2008; Braun et al. 2006, Rumberger & Palardy, 2005; Rumberger & Thomas, 2000). In addition, we have included a school's AYP status in Math or ELA.

Results

The results of the HLM analyses support the findings of the descriptive analysis presented in this report. The key findings of the HLM analyses are presented in the in-depth section; the following tables present the detailed results of the HLM analysis in each subject area (for more information on variables and model development, please see Appendix 1: Methods).

In the following tables, the plus and minus signs represents positive (+) and negative (-) relationships between the variables and the student's MCAS score. In other words, when the relationship between the independent variable and MCAS scores is positive, students' MCAS scores tend to increase as the variable increases; when the relationship is negative, students' MCAS scores tend to decrease as the variable decreases. For the two-category variables gender, SPED, program enrollment, and AYP, a plus sign (+) indicates that the state of the category indicated in the independent variable list (e.g. 'Female') is associated with higher MCAS scores, while a minus sign (-) indicates that the other variable category (e.g. 'Male') is associated with higher scores. Finally, the p-value indicates whether or not the direction of the relationship is

statistically significant, or unlikely to have occurred by chance. For the purposes of this study, any result that has a p-value of less than .05 is considered statistically significant (as indicated with an asterisk in the table).

Results: English Language Arts

As discussed in the in-depth section, there is no significant difference in achievement on ELA MCAS testing between LEP students in ELL programs and LEP students in general education. Of the variables included in this analysis, including both individual and school characteristics, MEPA scores and SPED placement provide the most predictive value for student achievement in English Language Arts. There is a positive relationship between MEPA scores, a key measure of English language attainment, and ELA achievement with MCAS ELA scores tending to increase as MEPA scores increase. On the other hand, LEP students in SPED programs tend to have lower levels of achievement than LEP students that are not in SPED programs. However, this does not hold true at the high school level, where there is no significant difference in achievement between LEP students in SPED programs and LEP students that are not in SPED programs.

Two other variables representing individual characteristics, attendance rate and gender, demonstrated a statistically significant relationship with MCAS ELA scores at the high school level. There is a positive relationship between attendance rate and MCAS ELA scores, with scores tending to increase as attendance increases. The relationship between gender and ELA achievement is also significant, with female students tending to perform better on MCAS ELA tests than male students. Neither of these variables demonstrates a statistically significant relationship with ELA achievement at either the elementary or middle school level.

Of the four variables representing school environment, only two demonstrated a statistically significant relationship with ELA achievement: Adequate Yearly Progress (AYP) in ELA and the percentage of the school's population that is low income. There is a statistically significant positive relationship demonstrated between AYP in ELA and ELA achievement at the elementary and middle school levels. To paraphrase, LEP students that attend schools that have demonstrated AYP in ELA have higher MCAS

Table 1. HLM Estimates of LEP Students' MCAS ELA Scores. BPS, SY2009

Independent Variables	Elementary School[b]		Middle School[c]		High School[d]	
	Direction of Relationship	*p*	Direction of Relationship	*p*	Direction of Relationship	*p*
Student level variables						
Attendance	+	0.087	+	0.098	+	0.009*
Female	+	0.671	+	0.096	+	0.003*
MEPA score	+	<0.001*	+	<0.001*	+	<0.001*
SPED placement	-	<0.001*	-	<0.001*	-	0.462
Enrolled in SEI language specific program[a]	-	0.664	-	0.488	+	0.895
Enrolled in SEI multilingual program[a]	-	0.403	+	0.255	+	0.360
Enrolled in Non-SEI ELL program[a]	+	0.191	+	0.629	-	0.936
School level variables						
AYP in ELA— aggregate	+	0.022*	+		+	
% of school population that is low income	-	0.918	-	0.012*	-	0.461
School size (small, medium, large)	-	0.228	+	0.003*	+	0.117
% of school population that is Limited English Proficient	-	0.251	-	0.463	-	0.670

Notes: [a] Comparison group is LEP students not in an ELL program; [b] Number of students = 1395, Number of schools = 74; [c] Number of students = 1451, Number of schools = 41; d Number of students = 778, Number of schools = 31; * Significant at p < .05

ELA scores on average than LEP students who attend schools who have not demonstrated AYP in ELA. This relationship is not statistically significant at the high school level. On the other hand, there is a statistically significant relationship between the percentage of a given school's population that consists of low income students and ELA achievement at the middle school level in the negative direction. In other words, as the proportion of low income students at a school increases, MCAS scores in ELA tend to decrease. However, this relationship is not statistically significant at either the elementary or high school level.

The remaining two variables representing school environment, school size and the percentage of a given school's population that consists of LEP students, did not have a statistically significant relationship with MCAS ELA scores at any level of schooling.

Results: Math

As discussed in the in-depth section, there is a significant positive relationship between participation in an ELL program and MCAS Math scores at the high school levels. This means that LEP students that are enrolled in any ELL program in high school, including language specific and multi-language SEI programs and non-SEI programs, tend to perform better on MCAS Math testing than LEP students in general education. LEP students enrolled in non-SEI programs in elementary school also tend to perform better on MCAS Math testing than LEP students in the general education population. There is no statistically significant relationship between placement in an SEI program and MCAS Math scores at the elementary school level, or between placement in any ELL program and MCAS Math scores at the middle school level.

MEPA scores and SPED placement have a consistently statistically significant relationship with MCAS Math scores as well as with ELA scores, and, once again, these two variables account for the highest amount of predictive value in this variable set. The relationship between MEPA scores and Math attainment is positive and statistically significant at all schooling levels, which means that as MEPA scores increase MCAS Math scores tend to increase as well. In contrast, SPED placement shows a significant negative relationship with MCAS Math scores, with students in SPED programs tending to have lower levels of math attainment at all schooling levels.

The other two variables representing individual characteristics, attendance rate and gender, also show statistically significant relationships with math attainment at all schooling levels. The relationship between attendance and MCAS Math scores is positive, with students with higher attendance rates tending to demonstrate higher levels of math attainment. The relationship between gender and math attainment indicates that males tend to perform better than females on MCAS Math testing at all levels of schooling.

Amongst the four variables that represent school environment, only AYP in Math demonstrates a statistically significant relationship with MCAS Math scores. The relationship is positive, with students attending schools that have demonstrated AYP in Math tending to achieve higher MCAS Math scores than students who attend schools that have not. There is no statistically significant relationship between MCAS Math outcomes and the percentage of the school population that is made up of low income students, the size of the school, or the percentage of the school population that is made up of LEP students.

Table 2. HLM Estimates of LEP Students' MCAS Math Scores. BPS, SY2009

Independent Variables	Elementary School[b]		Middle School[c]		High School[d]	
	Direction of Relationship	*p*	Direction of Relationship	*p*	Direction of Relationship	*p*
Student level variables						
Attendance	+	<0.001*	+	<0.001*	+	<0.001*
Female	-	<0.001*	-	0.003*	-	0.014*
MEPA score	+	<0.001*	+	<0.001*	+	<0.001*
SPED placement	-	<0.001*	-	<0.001*	-	0.023*
Enrolled in SEI language specific program[a]	+	0.437	+	0.522	+	<0.001*
Enrolled in SEI multilingual program[a]	+	0.625	+	0.087	+	0.005*
Enrolled in Non-SEI ELL program[a]	+	0.043*	+	0.219	+	0.035*
School level variables						
AYP in Math— aggregate	+	0.868	+	0.004*	+	0.030*
% of school population that is low income	-	0.397	+	0.835	-	0.470
School size (small, medium, large)	-	0.718	-	0.937	+	0.433
% of school population that is Limited English Proficient	+	0.700	-	0.084	-	0.351

Notes: [a] Comparison group is LEP students not in an ELL program; [b] Number of students = 1416, Number of schools = 74; [c] Number of students = 1539, Number of schools = 41; d Number of students = 732, Number of schools = 31; * Significant at p < .05

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