



LABOR MARKET  
ASSESSMENT TOOL

ESTIMATES EDUCATIONAL, TRAINING & SKILLS  
REQUIREMENTS • ESTIMATES WAGES • PROJECTS  
FUTURE LABOR MARKET TRENDS • ESTIMATES  
HUMAN CAPITAL IN THE LABOR FORCE

## LANGUAGE SKILL REQUIREMENTS IN THE LABOR MARKET

**INTRODUCTION** The structure of the U.S. economy has changed dramatically over the last few decades. Researchers and analysts often point to the reduced role of the manufacturing sector, the increased importance of the service and knowledge sectors, advancements in technology, and the spread of globalization as evidence that the ways in which we “do work” have fundamentally changed. In particular, work today requires more education, more advanced technical skills, and greater social skills than in the past. It is likely that this trend will continue in the coming years. As a result, the human capital characteristics of the population are of critical importance when considering the current and future economic health of a city.

Human capital is a particularly salient issue in Boston. While the Greater Boston area boasts one of the most educated populations in the United States, the region has experienced significant demographic changes in recent years which could play an important role in the area’s economic future. One of the most notable changes in Boston’s population (and the Commonwealth of Massachusetts, as well) is the dramatic increase in the foreign-born population. Without the recent surge in the number of foreign-born residents, the population in both the Commonwealth and the City of Boston would have decreased at the time of the last Census<sup>1</sup>. With the Baby Boomers approaching retirement age, it is often suggested that immigrants will play an important role in filling critical job vacancies. However, as noted by MassINC in its landmark research on *The Changing Face of Massachusetts*, segments of the foreign-born population in the Commonwealth have serious human capital deficiencies related to educational attainment and English language proficiency. In this report, we will investigate the characteristics of the workforce in Metro Boston with limited English language skills. As we will demonstrate, the overwhelming majority of this group is comprised of foreign-born residents. In addition, we will analyze the language skill requirements for the current labor market, as well as what is projected for the year 2014.

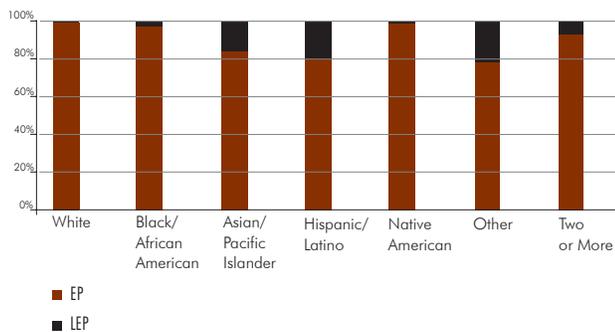
**LIMITED ENGLISH PROFICIENCY IN GREATER BOSTON’S WORKFORCE** Previous research using the 2000 U.S. Census defines a person as having limited English language skills if they report that they speak English “not well” or “not at all”. In this report, we will refer to these individuals as having Limited English Proficiency (LEP). Conversely, those who identify themselves as speaking English “only”, “very well”, or “well” will be referred to this report as having English Proficiency (EP)<sup>2</sup>.

Metro Boston’s workforce is made up of more than 1.8 million people. Using the labels outlined above, close to 55,000 of these workers can be classified as LEP--- approximately 3% of the total workforce. The LEP workforce is particularly concentrated in the City of Boston. While 17% of the Metro Boston workforce lives in the City of Boston, 37% of the LEP workforce in the region resides in the City of Boston. Not surprisingly, LEP is a significant issue among immigrants in Metro Boston, where 16% of the total foreign-born workforce reported having limited English language skills<sup>3</sup>. When we examine language skill by racial category, we continue to see a close connection between English language skills and the immigrant population.



**CHART 1**

**Race by Language Proficiency**



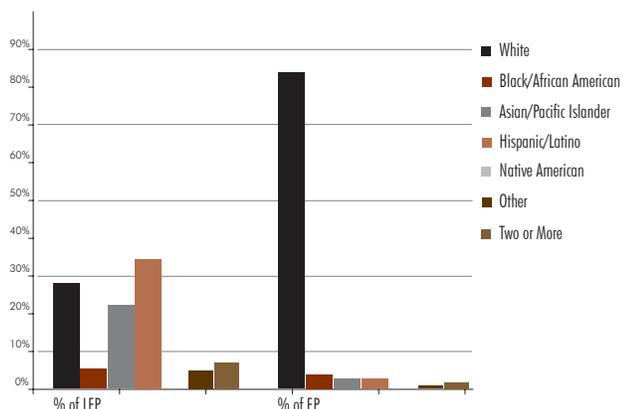
As the chart above shows, LEP impacts certain racial categories more than others. Specifically, we see a significant proportion of LEP among Hispanic/Latinos (21%), Asian/Pacific Islander (14%), those who identified their racial or ethnic background as “other” (23%)<sup>4</sup>, and those who identified themselves as having two or more racial backgrounds (10%)<sup>5</sup>. It is commonly known that much of the recent immigration into both the United States and the Greater Boston region has come from Latin American and Asian countries. As a result, it is not surprising to see a significant proportion of individuals classified as LEP in these two racial groups. Additionally, both the “other” and the “two or more races” categories are made up primarily of people not born in the 50 United States (75% and 57%, respectively), making it extremely likely that these individuals hail from places where English is not the primary language. As one might expect, the proportion of LEP is quite small in the white and black/African American racial categories (1% and 3%, respectively).

**COMPARING THE WORKFORCES WITH LIMITED ENGLISH PROFICIENCY AND ENGLISH PROFICIENCY IN GREATER BOSTON**

Next, we examine the demographic characteristics of the Metro Boston workforce characterized as LEP and those labeled EP. In short, striking differences arise between these two populations in terms of racial and ethnic makeup and educational attainment.

**CHART 2**

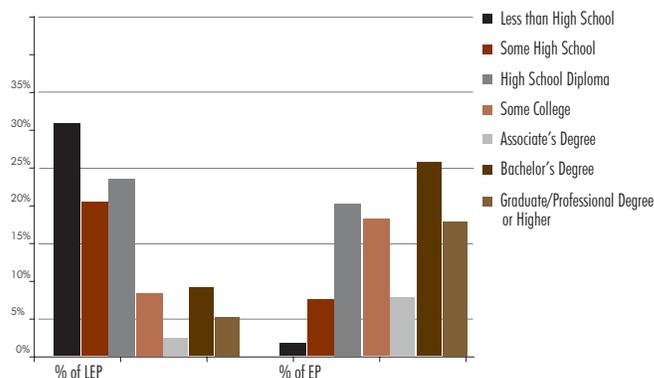
**Language Proficiency by Race**



Overall, the vast majority of the EP workforce is white (84%); whereas the racial and ethnic background of the LEP workforce is much more diverse. Approximately 57% of the Metro Boston workforce with LEP is comprised of Hispanic/Latinos or Asians. Interestingly, there are a large number of whites in the LEP group. Part of this is not surprising, since whites comprise the largest single racial group in the population. That said, only 1% of the white population was LEP. The majority of these are foreign-born<sup>6</sup>, hailing from European countries.

**CHART 3**

**Language Proficiency by Education**



Not surprisingly, the EP workforce has a higher level of education on average than the LEP workforce. Specifically, over half the LEP workforce has earned less than a high school diploma, compared with only 9% of the EP workforce. Conversely, 44% of the EP workforce has earned a Bachelor’s Degree or higher, compared to 15% of the LEP workforce. While the proportion of the LEP workforce with a Bachelor’s Degree or higher is small, there are still a number of people with college education in the LEP group. These are likely to be individuals who earned their degrees in their home country. These data indicate that there are significant human capital assets among individuals classified as LEP. Improving the English language skills of this group could lead to them qualifying for a range of high skill occupations.

**LANGUAGE SKILL REQUIREMENTS**

In order to estimate language skill requirements for individual occupations we used the Labor Market Assessment Tool (LMAT). LMAT is an innovative computer program using secondary data that provides a great deal of information about the education and skill requirements of individual occupations. Together, these data sources can examine various characteristics within the labor market. The secondary data sources of note for this research are the Occupational Employment Statistics (OES), the Occupational Information Network (O\*NET), and the Bureau of Labor Statistics (BLS) and the Massachusetts Department of Unemployment Assistance (DUA) labor market projections for the year 2014.

OES and O\*NET can provide a great deal of information regarding the requirements for working in specific industries. OES supplies the full set of occupational titles, as well as the employment and wages associated with a given occupation in a selected industry. O\*NET provides information on various detailed characteristics associated with an occupation, including skills and educational requirements<sup>7</sup>. Together these data can be used to plot the distribution of occupations and wages within an industry, as well as the skills needed to work in occupations found within an industry. LMAT also includes the BLS bi-annual employment projections by industry and occupation for the years 2004-2014<sup>8</sup>.

In order to estimate language skill requirements we selected three language-based variables: speaking, writing, and reading comprehension<sup>9</sup>. We aggregated the scores from the three language-based variables into a *language skill scale*. The higher the score on the variable, the more important language proficiency is in performing the job. Next, we split occupations into four categories, or quartiles, of language skill: *Low*, *Medium-low*, *Medium-high*, and *High*. The occupations scoring in the lowest 25% of language skill requirements were placed in the *Low* category, occupations scoring between 26% and 50% were placed in the *Medium-low* category, jobs scoring between 51% and 75% were placed in the *Medium-high* category, and jobs scoring in the top 25% were placed in the *High* category.

Using this taxonomy, we examined the proportion of total jobs in the labor market and the average wages in each of the language skill categories. We looked at these data for the labor market in 2004, as well as the projected labor market in 2014.

#### CHART 4

##### TOTAL JOBS BY REQUIRED LANGUAGE SKILL- 2004<sup>10</sup>

Language Skill	Low	Med-Low	Med-High	High
Employment	24.9%	30.8%	29%	15.3%
Average Wage	\$23,714	\$30,235	\$47,611	\$63,936

Overall, the bulk of employment opportunities fall in the middle quartiles of the language skill scale. Approximately 60% of all jobs in the labor market fall in the Medium-low or the Medium-high language skill categories. In short, the vast majority of jobs in the labor market require at least Medium-low language skill. As expected, there is a clear connection between language skill requirements and salary. For example, occupations in the highest language skill category pay over 2 ½ times more than occupations in the lowest language skill category. So, while there are jobs available to people with very limited language skill, there are significant social and economic issues to consider. Jobs that require less language skill pay dramatically less than jobs that require high levels of language skill.

Looking at the Bureau of Labor Statistics (BLS) projections for the year 2014, we see very little difference in language skill requirement from the 2004 results. The proportion of jobs requiring only minimal language skills remains around 24%; the proportion requiring High language skill remains close to 16%.

#### CHART 5

##### TOTAL JOBS BY REQUIRED LANGUAGE SKILL - 2014<sup>11</sup>

Language Skill	Low	Med-Low	Med-High	High
Employment	24.4%	30.6%	29.1%	15.9%
Average Wage	\$23,762	\$30,349	\$48,195	\$64,071

Again, the vast majority of projected employment would be in occupations with at least Medium-low language skill requirements. The Medium-high and High language skill categories make up only a slightly larger proportion of projected employment in 2014, as compared to 2004.

Next, we used Department of Unemployment Assistance (DUA) data to investigate projected occupational growth between 2004 and 2014 for Metro Boston<sup>12</sup>. We examined projected new jobs for the region, as well as the average salary for new jobs in each of the language skill categories.

#### CHART 6

##### PROJECTED JOB GROWTH BETWEEN 2004-2014 BY REQUIRED LANGUAGE SKILL FOR METRO BOSTON

Language Skill	Low	Med-Low	Med-High	High
Growth	2%	5.8%	9.5%	14.7%
Average Wage	\$12,765	\$26,853	\$58,013	\$69,826

Despite what seems to be similar job distributions in 2004 and 2014 using the BLS projections, the job growth projections using the Commonwealth's data suggest that job growth will be much higher in the Medium-high and High language skill categories than in the Low or Medium-low categories. Moreover, projected new jobs in the Low language skill category are occupations with extremely low salaries. The average wages of new jobs created in the Low language skill category is less than \$13,000---less than half the average salary of new jobs in the Medium-low category, over 4 ½ times less than the average salary of new jobs in the Medium-high category, and almost 5 ½ times less than the average salary of new jobs in the High language skill required category.

As these data indicate, the number of new jobs available in Metro Boston to individuals with low English language skills is limited today and will be even more severely limited by 2014. In addition, new jobs requiring Low language skill tend to be extremely low paying and will continue to be in the future. Again, this suggests that individuals with limited English language skills will have a very difficult time finding employment in occupations that pay an adequate wage.

**CONCLUSIONS** In this report, we discussed English language skills and Greater Boston's workforce. We found this population is racially and ethnically diverse, primarily foreign-born, and has low levels of educational attainment. Next, we examined the characteristics of occupations requiring varying levels of language skill in the labor market. We found that the majority of jobs require at least Medium-low language skills. We also observed that, on average, occupations requiring more language skills pay significantly more than occupations requiring less language skill. It appears that this relationship between language skills, job availability, and wages will likely become more pronounced between now and 2014. In terms of projecting new jobs for the Greater Boston region for 2014, the Medium-high and High language skill categories are expected to grow at a faster rate than the Medium-low and Low categories. In addition, the projected new jobs in the Low language skill category are typically very low paying.

Together, these trends point to two main themes: the overall economic health of Greater Boston and the quality of life for residents in the region. As we stated earlier, it is commonly held that work today requires more education, technical, and social skills than in the past and that this trend is likely to continue in the coming years. In addition, with the Baby Boomer generation approaching retirement age and the foreign-born accounting for most, if not all, of the population growth in the region, immigrants are expected to play an important role in filling critical job vacancies. As a result, the human capital of the foreign-born population, specifically educational attainment and English language proficiency, is an important economic issue. Our data reveal that language skill requirements will slightly increase and that job growth is expected to be much more substantial in the Medium-high and High language skill occupations by 2014.

While it is unlikely that the full effects of this on the economy will be felt by 2014, it is important to recognize that the trend in the labor market is more job growth in occupations requiring strong language skills and that the bulk of population growth in the area is with people with limited familiarity with the English language.

We also see dramatic differences in the average wages between the language skill categories. Overall, Low language skill occupations pay far less than occupations in each of the other language skill categories. This is obviously a significant quality of life issue. As the data above show, new jobs in the lowest language skill category pay less than \$13,000 a year on average.

While the Greater Boston region features a highly educated workforce overall, the retirement of the Baby Boomer generation makes improving the human capital characteristics of Greater Boston's low skilled workforce an important issue. While there is an obvious connection between educational attainment and language proficiency that is somewhat difficult to disentangle, as the data above indicate, even limited improvement in language skill could open the door to more occupations and higher wages to Greater Boston's workforce with Limited English Proficiency. As a result, enhancing the language skills of the LEP workforce through training programs, including English to Speakers of Other Languages (ESOL) course, needs to be focal point for the region. This includes improving both the availability and the quality of English language courses. This is a concern of great importance to the Metro Boston area and specifically the City of Boston, as the LEP population in the region is particularly concentrated in the city. This issue not only affects economic development in the region, but the quality of life for a growing segment of this region's population.

## END NOTES

- 1 MassINC's *The Changing Face of Massachusetts* and Peirce and Johnson's *Boston Unbound*.
- 2 In MassINC's *The Changing Face of Massachusetts* report, the authors used these same definitions, but labeled the two categories *language challenge* and *no language challenge*, respectively.
- 3 Comparatively, less than 0.01% of the native-born workforce reported having limited English language skills.
- 4 Only 25% of those people in Metro Boston who identified themselves as "other" were born in one of the 50 United States.
- 5 Only 43.5% of those people in Metro Boston who identified themselves as "two or more races" were born in one of the 50 United States.
- 6 81.4% of LEP whites in Metro Boston are foreign-born.
- 7 These skills and requirements are based on worker rankings of the skills needed to perform their occupation.
- 8 For more detailed information on LMAT, please see *Introducing the Labor Market Assessment Tool*-Boston Redevelopment Authority Research Division-publication 613.
- 9 These variables are measured on two separate Likert scales. Workers are asked to rate how important a particular skill is in doing their current job on a 1-5 scale, as well as what level of that skill is needed in doing their current job on a 1-7 scale. The higher the score on the scale, the more important language skills are in performing jobs tasks within the selected occupation. We tested the reliability within and between each language skill.
- 10 There are 98 occupational titles in O\*NET without language skill data. These occupations make up approximately 5% of the labor market. We normalized the percentages, so the sum of the individual category percentages equal 100%.
- 11 We normalize the percentage for 2014, as we did for 2004 (see footnote 10). Income is measured in 2004 dollars.
- 12 The DUA projections for 2014 are actually for the Commonwealth. The BRA Research Division calculated the proportion each occupational title makes up in Boston's Metropolitan Statistical Area (MSA) and applied that proportion to the DUA's projected job change for each occupational title within the Commonwealth.

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