

# What Does PIAAC Tell Us About the Skills and Competencies of Immigrant Adults in the United States?

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# **What Does PIAAC Tell Us About the Skills and Competencies of Immigrant Adults in the United States?**

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## Executive Summary

The ability to understand, evaluate, and use written information (literacy), process and communicate mathematical information (numeracy), and access and use digital technology are foundational to full participation in today's global, knowledge-based societies. This paper employs the 2012 Program for the International Assessment of Adult Competencies (PIAAC) that directly assessed the cognitive skills of adults ages 16 to 65 in 24 OECD<sup>2</sup> countries, including the United States. In this report we analyze the U.S. data on English literacy and numeracy among *U.S. immigrant adults* and explore how their cognitive skills—skills that are tested in English—are related to key immigrant integration outcomes such as employment, income, access to training, and health.

*Immigrant adults lag U.S.-born adults and account for a large share of U.S. low-skilled adults.* Overall, the PIAAC results indicate that U.S. adults fared worse than most of their counterparts across the participating countries in the tested areas of proficiency (i.e., literacy, numeracy, and problem solving in technology-rich environments). The results are significant because research finds that literacy and other cognitive skills are strong predictors of income, employment, education and health and because differences in skill levels are an important source of widening income inequality.

We found that immigrants lagged U.S.-born adults in terms of literacy and numeracy in English with both groups scoring below international averages. Immigrants were overrepresented among the low-skilled adults: While immigrants made up 15 percent of the total U.S. adult 16-65 population surveyed by the PIAAC, they accounted for 33 percent of adults with low literacy skills and 24 percent of those with low numeracy skills. Nonetheless we found that despite these relatively low overall scores, immigrants' impacts on the U.S. overall scores and international standing is minimal.

*Literacy and numeracy skills varied across key demographic and social characteristics.* Our analysis showed that age, race/ethnicity, time of arrival, education, place of education, and other characteristics were linked to immigrants' skills. We found that:

- Younger immigrants had stronger skills than older immigrants, while younger natives only barely outperformed their older counterparts;
- Higher shares of Hispanic immigrants and native and foreign-born blacks performed at low levels on both literacy and numeracy tests;
- Skills of immigrants who arrived between 2007 and 2011 were essentially the same as those of previous immigrant cohorts, suggesting that recent post-recession cohorts included smaller shares of the less educated, and a greater share of skilled immigrants;
- For both immigrant and native adults, higher educational attainment was associated with higher literacy and numeracy scores. Nonetheless, educational attainment did not fully explain adults' cognitive skills. Among the college educated, 22 percent of natives and 54 percent of immigrants scored below proficient on literacy;
- Foreign-educated immigrants lagged U.S.-educated immigrants in both literacy and numeracy skills; at the same time, the skills of U.S.-educated immigrants were essentially equivalent to those of U.S.-born adults;

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<sup>2</sup> The following 24 countries from the Organization for Economic Cooperation and Development (OECD) participated in PIAAC 2012: Australia, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, Norway, Poland, Russia, Slovak Republic, South Korea, Spain, Sweden, United Kingdom, and the United States.

- For U.S.-born adults, learning a foreign language as a child did not appear to be an obstacle to English language literacy and numeracy;
- Self-reported data on how well respondents speak English were closely correlated with PIAAC's directly tested literacy and numeracy skills, a finding that seems to validate the use of *spoken English proficiency* in the U.S. Census Bureau's American Community Survey to describe immigrants' English literacy.
- English literacy and numeracy varied widely across the immigrant subgroup that had been classified as limited English proficient (LEP), highlighting the need to address the diverse English language proficiency, educational attainment, and other characteristics of adults who are defined as LEP for funding and instructional purposes.

*While cognitive skills of the first-generation<sup>3</sup> immigrants lagged those of the third generation's, the second generation appears to catch up.* Even though this progress offers somewhat good news from an integration perspective, the average overall proficiencies of both second- and third-generation adults were relatively low by OECD standards.

*Immigrants at low tested cognitive proficiency levels were significantly more likely to be employed than natives with the same levels of skills.* But while immigrants were able to obtain jobs regardless of their English literacy and numeracy skills, they needed higher levels of English competencies to be paid well—and on a par with natives. Low-skilled immigrants and natives alike were much less likely to participate in training programs than those with higher literacy and numeracy skills.

*Both immigrants and natives with low literacy scores were more likely to report poor health.*

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<sup>3</sup> Following the OECD definition, we define *immigrants* (or *foreign born*) as persons born abroad regardless of their citizenship. The *second generation* refers to persons born in the United States with one or more foreign-born parents. The *third/plus* generation refers to adults with both U.S.-born parents. We use the terms *U.S. born* and *native born* interchangeably to refer to those who were born in the United States.

## I. Introduction

Developed and organized by the Organization for Economic Cooperation and Development (OECD), the Program for the International Assessment of Adult Competencies (PIAAC) is the largest and most innovative direct assessment of the cognitive skills of working-age adults undertaken to-date. Approximately 166,000 adults ages 16 to 65, including 5,010 U.S. adults, participated in the survey across 24 countries.<sup>4</sup> PIAAC tests respondents' literacy, numeracy, and problem-solving skills in technology-rich environments (here referred to as "problem-solving" skills) to provide rich data on what adults know and how well they can use their skills at work and in everyday life.<sup>5</sup> *Literacy* refers to adults' ability to understand and use written text in print and electronic formats; *numeracy*—to evaluate, use, and communicate numerical and mathematical concepts; and *problem-solving*—to access and interpret information in digital environments such as websites and e-mails.<sup>6</sup> The assessed tasks in each domain are meant to be culturally appropriate and drawn from everyday social and work contexts. In so doing, the survey reveals the complex interconnections between formal education and credentials and the use of particular skills in work, home, and community settings.<sup>7</sup> The results follow somewhat similar international comparative tests of adults' skills conducted between 1994 and 2008<sup>8</sup> and the widely reported results of the PISA<sup>9</sup> test of academic skills of 15-year-old students.

Viewed from the U.S. perspective, PIAAC outcomes, like those of the earlier adult skills surveys, are sobering. U.S. adults scored below the international average on literacy, numeracy, and problems solving skills domains. U.S. adults' numeracy skills—the best predictor of workforce performance—ranked above only those of Italy and Spain. U.S. adults' problem-solving skills ranked somewhat higher but still fell well below international averages despite the United States' leading role in creating and expanding the high-tech industry.

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<sup>4</sup> Non-institutionalized adults in U.S. households or group quarters—regardless of their citizenship, legal status, or language status—were interviewed and assessed in the period between August 25, 2011 and April 3, 2012. See Madeline Goodman, Robert Finnegan, Leyla Mohadjer, Tom Krenzke, and Jacquie Hogan, *Literacy, Numeracy, and Problem Solving in Technology-Rich Environments Among U.S. Adults: Results from the Program for the International Assessment of Adult Competencies 2012: First Look* (NCES 2014-008). (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 2014), <http://nces.ed.gov/pubs2014/2014008.pdf>.

<sup>5</sup> PIAAC administered four types of assessments: literacy, numeracy, problem-solving in technology-rich environments, and reading components (for adults with very low literacy skills). All countries were required to conduct the literacy and numeracy assessments, while the other two were optional. The United States participated in all four core competency domains of adult cognitive skills. Adults with very low literacy skills took the reading component part that assessed their vocabulary knowledge, sentence processing, and passage comprehension. Their scores were included in literacy scores. See, generally Goodman, et al., *Literacy, Numeracy, and Problem Solving*.

<sup>6</sup> OECD, *Time for the U.S. to Reskill? What the Survey of Adult Skills Says*, (Brussels: OECD, 2013), [http://skills.oecd.org/documents/Survey\\_of\\_Adult\\_Skills\\_US.pdf](http://skills.oecd.org/documents/Survey_of_Adult_Skills_US.pdf).

<sup>7</sup> Louis Soares and Laura W. Perna, *Readiness for the Learning Economy: Insights from the OECD's Survey of Adult Skills on Workplace Readiness and Preparation* (Washington, DC: American Council on Education and Center for Policy Research and Strategy, 2014), [http://www.ahead-penn.org/sites/ahead-penn.org/files/PIAAC\\_report\\_v1.pdf](http://www.ahead-penn.org/sites/ahead-penn.org/files/PIAAC_report_v1.pdf).

<sup>8</sup> The International Adult Literacy Survey (IALS) was implemented between 1994 and 1998 and the Adult Literacy and Life Skills Survey (ALL) was conducted between 2003 and 2008. PIAAC includes certain items from both earlier surveys to allow for analysis over time.

<sup>9</sup> The Program for International Student Assessment (PISA) is an international assessment of 15-year-old students' academic performance on math, reading, and science in 65 OECD member and non-member countries.

PIAAC also reveals that U.S. adults' scores in literacy and numeracy (both assessed only in English) are eroding over time.<sup>10</sup> PIAAC data show that Americans with bachelor's degrees trailed the international average for degree holders,<sup>11</sup> and the prospects for rapid change are dim given the fact that young people entering the U.S. labor market have only marginally better skills than older workers who are near retirement.

Consistent with much current political and economic debate, PIAAC underscores deep national social inequalities. While the share of U.S. adults who scored at the highest levels was similar to international averages, the share that scored at the lowest levels was among the largest of all countries represented.<sup>12</sup> Racial and ethnic gaps in scoring are very wide: Hispanics who comprised 14 percent of those surveyed made up 53 percent of respondents scoring at the lowest level in English literacy; Blacks who were 13 percent of the sample made up 32 percent of those scoring at the lowest level in numeracy. Immigrants (15 percent of the sample) were one third of the low skilled.

In sum, PIAAC gives us a rather disheartening portrait of the skills of the U.S. current labor force in which between a half and two-thirds of working-age adults were not proficient in literacy and numeracy. It is hard to see how this rather low level of skills and competencies of the current and incoming generation of workers will meet the needs of an economy that will be increasingly dominated in the years ahead by higher skilled workers.<sup>13</sup>

PIAAC is notable not just for the light it sheds on the skills of different nations' adult populations. The survey also provides rich data on the skill distribution of differing subpopulations including immigrants and their U.S.-born children.<sup>14</sup> Fifteen percent of the U.S. total sample of 5,010 persons surveyed was foreign born; 9 percent of adults sampled were the U.S.-born children of immigrants (or members of the second generation).<sup>15</sup> PIAAC thus uniquely allows us to develop a multigenerational understanding of skills acquisition among immigrant-origin populations, potentially answering larger questions that bear on trends in immigrant integration in the United States outlined above.

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<sup>10</sup> Irwin Kirsch, *PIAAC: Overview and Selected Results*, presented at PIAAC Expert Group, Educational Testing Service, Washington DC, August 14, 2014.

<sup>11</sup> Authors' analysis. See also, Kevin Carey, "American Think We Have the World's Best Colleges. We Don't," *The New York Times*, June 28, 2014, [http://www.nytimes.com/2014/06/29/upshot/americans-think-we-have-the-worlds-best-colleges-we-dont.html?\\_r=0](http://www.nytimes.com/2014/06/29/upshot/americans-think-we-have-the-worlds-best-colleges-we-dont.html?_r=0).

<sup>12</sup> American Institutes for Research, *What the Data Say about the Skills of U.S. Adults*, [http://static.squarespace.com/static/51bb74b8e4b0139570ddf020/t/535fdfdb4b032825e56cbf8/1398792155103/PIAAC%20Results%20Summary%20Brochure\\_Final\\_041814.pdf](http://static.squarespace.com/static/51bb74b8e4b0139570ddf020/t/535fdfdb4b032825e56cbf8/1398792155103/PIAAC%20Results%20Summary%20Brochure_Final_041814.pdf).

<sup>13</sup> Anthony Carnevale, Nicole Smith, and Jeff Strohl, *Projections of Jobs and Education Requirements through 2018* (Washington, DC: Center on Education and the Workforce, 2010), [www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/FullReport.pdf](http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/FullReport.pdf).

<sup>14</sup> Following the OECD definition, we define *immigrants* (or *foreign born*) as persons born abroad regardless of their citizenship (thus, persons born abroad to American parents are considered to be a foreign-born person for the purposes of this paper). The *second generation* refers to persons born in the United States with one or more foreign-born parents. The *third/plus* generation refers to adults with both U.S.-born parents.

<sup>15</sup> The analyses we present here are based on the restricted-use license PIAAC sample. This dataset contains more detailed information such as continuous (instead of grouped) age and earnings than information available in the public-use license data. All differences described in this paper were tested for statistical significance at the 0.05 level. However, even in cases when the differences are not statistically significant, it is possible that the actual differences cannot be observed due to small sample size or other data limitations.

This paper begins with the key research questions we explored using PIAAC data. We then discuss the PIAAC survey's methodology and its strengths and limitations. Next we describe how cognitive skills vary by race/ethnicity, education, immigrant generation, language abilities, and other important characteristics. We also explore the relationship between literacy and numeracy and economic and health outcomes. We conclude with a discussion of our findings and their policy implications for immigrant integration.

## II. Research Questions

This largely descriptive paper is animated by, and organized around, a number of research questions that lie at the intersection of immigrant integration, labor force, and education literature:

- What is the size of the populations (immigrants and U.S. born) that have low levels of English literacy, numeracy, and problem-solving skills?
- What are the key socio-demographic, family, linguistic, and labor market characteristics of immigrant and native-born adults in the United States? We focus here especially on variables featured in the PIAAC such as English language skills and their interplay with immigrant status, time in the United States, generational status, participation in language and workforce development training and degree-level programs, attachment to the labor market, and incomes.
- How do the skills of immigrants compare to those of native born?
- How do the skills of the recently arrived compare to those of more established immigrants? How do the literacy skills of youth 16-26 differ from those of the older generation (55-65) for immigrants versus U.S. born? Is the generation gap larger among immigrants or natives?
- How do skill levels change across generations: from the first, to the 1.5 (entered before 13), to the second generation?
- To what degree are the low overall scores of U.S. adults on the PIAAC attributable to the depressing effects of the lower scores of the foreign born?
- How do the skills of immigrants whose highest education level was earned abroad compare to those whose highest level of education was in the United States?
- How do immigrants' first languages and self-reported English language proficiency levels relate to English literacy skills?
- How are labor market access and incomes related to skill levels and how do they differ between immigrant and native populations?
- How representative does the PIAAC sample of first and second generation adults appear to be when compared to the U.S. Census Bureau's larger American Community Survey (ACS) and Current Population Survey (CPS)?

### III. PIAAC Data and Methodology

PIAAC's measurement strategies have been amply and well documented.<sup>16</sup> The survey is notable in several ways. First, PIAAC's background questionnaire is more extensive than either earlier adult skill assessments or the standard population surveys such like the ACS or CPS as PIAAC probed respondents':

- Formal and informal education and training (both already obtained and ongoing)
- Work history, work status, and economic outcomes
- Health and family structure
- Parent nativity
- Language first spoken, language used at home, and language classes taken
- Skills used at work.

Second, along with these detailed background data, the survey used advanced psychometric tests to directly assess and to provide reliable estimates of adults' proficiency in English literacy, numeracy, and problem solving in technology-rich environments. PIAAC data provide a unique lens for understanding how skills relate to social and economic outcomes. While other surveys frequently used in immigration research also collect data on human capital characteristics (such as educational attainment and spoken English proficiency), they are more limited in scope and are based on self-reported data. In contrast, PIAAC offers results from the direct assessment of the participants' literacy, numeracy, and problem-solving skills in addition to a broader set of self-reported human capital characteristics.

Scores on PIAAC tests range from 0 to 500 in each domain, corresponding to six proficiency levels for literacy and numeracy, and four levels for program solving.<sup>17</sup> Each additional year of education can be associated with approximately seven score points.<sup>18</sup> With regard to proficiency levels, one proficiency *level* translates roughly into seven years of education or 50 score points.<sup>19</sup> Full proficiency in general requires scoring at Levels 3, 4, or 5 in literacy and numeracy and three in problem-solving proficiency. In general, a score of 276 represents the cut point for being classified as Level 3 proficiency on literacy and numeracy and 341 on problem solving. We adopted OECD reports' language and guidelines<sup>20</sup> and grouped the skill levels on each of the three skill assessments into the following three categories (see Table 1):

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<sup>16</sup> See American Institutes for Research, *PIAAC A New Strategy to Assess Adult Competencies and Their Social and Economic Impact in the United States and Internationally*, Institute of Education Sciences, National Center for Education Statistics, [http://static.squarespace.com/static/51bb74b8e4b0139570ddf020/t/53c02debe4b011307db8c442/1405103595531/Introduction%20to%20PIAAC\\_063014.pdf](http://static.squarespace.com/static/51bb74b8e4b0139570ddf020/t/53c02debe4b011307db8c442/1405103595531/Introduction%20to%20PIAAC_063014.pdf).

<sup>17</sup> Each proficiency level is represented by a range of tasks. Each score denotes a point at which a respondent has a 67-percent chance of successfully completing tasks that are associated with a similar level of difficulty. See OECD, *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills* (Paris and Brussels, 2013), [https://www.insidehighered.com/sites/default/server\\_files/files/Skills%20volume%201%20\(eng\)--full%20v8--eBook%20\(01%2010%202013\).pdf](https://www.insidehighered.com/sites/default/server_files/files/Skills%20volume%201%20(eng)--full%20v8--eBook%20(01%2010%202013).pdf).

<sup>18</sup> OECD, *The Survey of Adult Skills (PIAAC): Implications for Education and Training Policies in Europe*, (Brussels: OECD, 2013), <http://www.oecd.org/site/piaac/PIAAC%20EU%20Analysis%2008%2010%202013%20-%20WEB%20version.pdf>.

<sup>19</sup> Ibid.

<sup>20</sup> OECD, *Time for the U.S. to Reskill?* OECD, *The Survey of Adult Skills (PIAAC)*.

**Table 1. Definitions of Proficiency Levels and Corresponding Cut Scores**

Population group by proficiency	Levels on Literacy and Numeracy Assessment	Levels on Problem Solving in Technology-Rich Environments (or Problem Solving) Assessment
Low proficiency (poor or low skills)	Level 1 and Below Level 1 <i>Cut scores: 0-225</i>	Level 1 and Below Level 1 <i>Cut scores: 0-290</i>
Basic proficiency	Level 2 <i>Cut scores: 226-275</i>	Level 2 <i>Cut scores: 291-340</i>
Proficient (including “high performers”)	Level 3: Proficient skills Levels 4 and 5: “High performers” <i>Cut scores: 276-500</i>	Level 3: Proficient or better <i>Cut scores: 341-500</i>

Third, PIAAC is notable because data collection for the background questionnaire and assessments were done primarily on laptop computers. PIAAC tests were designed to be computer-adaptive assessments, i.e., respondents were provided with tasks targeted to their performance levels. Adults who had no computer experience or were unwilling to take the test on the computer were provided a paper-and-pencil version of the test (on literacy and numeracy)—and were excluded from taking “problem-solving in the technology-rich environments” assessment. In the United States, about 80 percent of the PIAAC respondents took the computer tests.<sup>21</sup>

The U.S. background questionnaire was administered in both English and Spanish. However, all proficiency assessments of literacy, numeracy, and problem-solving skills were carried out exclusively in English. It could be expected, then, that immigrant subpopulations made up of those with little to no English skills and those speaking a language other than Spanish or English would be excluded from PIAAC results at higher rates. However our analysis suggests that these exclusions did not significantly reduce the overall representativeness of the immigrant-origin samples—at least when compared to the ACS or CPS (see Appendices A and B).

#### **A. PIAAC Sample Data Limitations**

The overall sample size of the U.S. respondents with available English literacy and numeracy scores was 4,898,<sup>22</sup> including 636 immigrants. Although the PIAAC survey sample was drawn to provide a nationally representative profile of the U.S. population, including immigrants, the sample size of 636 does not allow for a very detailed analysis of the immigrant sub-populations. We followed the sample guidelines outlined by OECD and did not display the results when the sample size was inadequate.

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<sup>21</sup> An additional 15 percent took the paper-and-pencil test, about 4 percent could not complete the questionnaire because of language difficulties or learning or mental disabilities, and 1 percent could not complete it for other reasons.

<sup>22</sup> Of the 6,100 U.S. respondents, 4,898 completed the background questionnaire; 112 were not able to do so for literacy-related reasons (i.e., lack of English or Spanish skills, or due to a learning or mental disability). It is likely that many of the 112 people who did not complete the questionnaire for *literacy-related reasons* were non-English/non-Spanish immigrants. Note that the final sample (5,010) included people with completed background questionnaires (4,898) and those who did not complete the questionnaire for literacy-related reasons (112). For more details, see Appendix C in Goodman, et al. *Literacy, Numeracy, and Problem Solving*.

In addition, while problem solving in technology rich-environments is an innovative and policy-relevant PIAAC variable, analyses of immigrants' scores are limited by non-random exclusion and small sample size. Because PIAAC is a test of English literacy, some limited English proficient immigrant adults were not able to participate fully. Some took the paper-and-pencil version of PIAAC, which automatically excluded them from taking the problem-solving component of the PIAAC assessment. This exclusion—in combination with some immigrant respondents' decision to only take the paper-and-pencil version of the test—meant that the immigrant sample of respondents tested on computer skills was smaller and likely not fully representative of the overall PIAAC immigrant sample. As a result, we have chosen to present here the results of the problem-solving assessment only for total immigrant and native populations, not by more detailed population characteristics.

#### IV. Key Findings

Citizens of knowledge-based societies need strong literacy, numeracy, and problem-solving skills to succeed in school, build a career, obtain health and social services, and engage in their communities.<sup>23</sup> Below we highlight key PIAAC findings regarding the distribution of skills of adults in the United States, focusing on the immigrant population, and the relationship between adult competencies and labor market participation, income, access to training, and health status.<sup>24</sup>

##### **Compared to adults in most other OECD countries, U.S. adults scored low on literacy, numeracy, and problem solving.**

While the importance of skills is rising, PIAAC data indicate that only small shares of American adults possessed strong English literacy (12 percent scored at Level 4 or 5), numeracy (9 percent), and problem-solving (6 percent) skills. More than half (52 percent) of adults in the United States struggled with basic literacy, scoring at Level 2 or below; the share with below-proficient numeracy skills was even greater (64 percent).

In terms of international ranking, U.S. adults scored significantly lower than most OECD countries both in terms of average scores and proficiency levels. The U.S. average literacy score (270) ranked 16<sup>th</sup> out of 24, behind the top performing countries such as Japan (296) and Finland (288) (see Figure 1).<sup>25</sup> The OECD average literacy score was 273 and numeracy score was 269; both were higher (and statistically significant) from the U.S. average literacy (270) and numeracy scores (253).<sup>26</sup>

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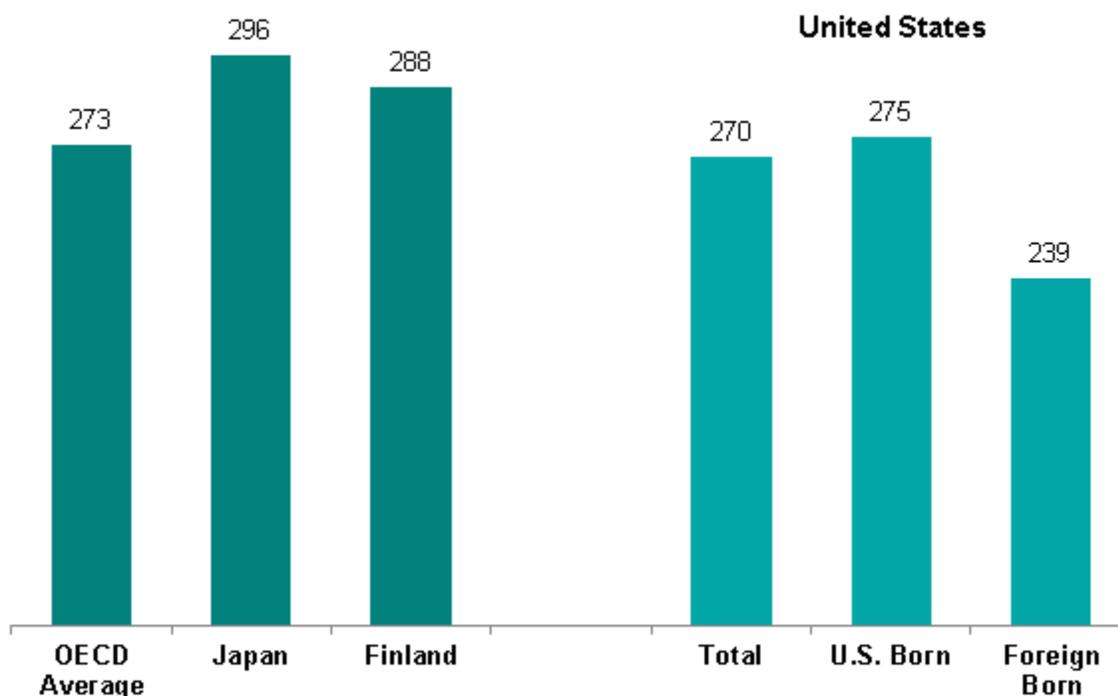
<sup>23</sup> Soares and Perna, *Readiness for the Learning Economy*.

<sup>24</sup> PIAAC is a sophisticated survey with a four-stage stratified area probability sample. It also had a complex assessment design: Respondents did not have to answer all test questions (some of their scores were imputed) and the level of question difficulty depended on the respondents' skills. The complexity of both sample and assessment design had implications for how the scores were generated. To account for these features of the PIAAC survey, our results were generated using SAS macros and procedures provided by the OECD that employed ten plausible values on each of the three skill domains. PIAAC sampling weights were used to produce population estimates. Regarding the PIAAC sampling, assessment strategies, and plausible values see, generally OECD, *Technical Report of the Survey of Adult Skills (PIAAC)*, [http://www.oecd.org/site/piaac/ Technical%20Report\\_17OCT13.pdf](http://www.oecd.org/site/piaac/Technical%20Report_17OCT13.pdf).

<sup>25</sup> Ibid.

<sup>26</sup> OECD, *Skills Outlook 2013*.

**Figure 1. Average Literacy Scores of Adults Ages 16 to 65 by Country and Nativity in the United States**



Source: Migration Policy Institute analysis of the 2012 PIAAC data.

Moreover, the skills of American adults have not improved over time. In 2003<sup>27</sup> their average score on literacy was 268—not meaningfully different from that on the 2012 PIAAC (270); the average score on numeracy was 262, higher (and statistically different) than the score of 253 on the 2012 PIAAC.<sup>28</sup>

**Compared to the U.S. born, immigrants had substantially lower proficiency scores in all three domains. Nativity disparities were widest in English literacy; they were somewhat narrower in problem-solving skills.**

A 2013 OECD report cited poor education preparation in U.S. schools, little improvement in educational attainment over time, and low literacy and numeracy skills among subpopulations including immigrants as potential explanations for the country’s lackluster results.<sup>29</sup> As in other PIAAC participating countries, the skills and competencies of U.S.-born adults were higher than those of immigrants, reflecting the fact that immigrants have lower skills in English because for many English is a second language.<sup>30</sup> In the United States, the native-immigrant difference on English literacy was 36 points (275 versus 239, see

<sup>27</sup> The 2003 scores were from the Adult Literacy and Life Skills Survey (ALL). ALL also assessed literacy (prose and document) and numeracy domains with scores similarly ranging from 0 to 500. Kirsch, *PIAAC: Overview and Selected Results*.

<sup>28</sup> Jaleh Soroui, *Highlights from the Program for the International Assessment of Adult Competencies (PIAAC), 2012*. Presented at the American Institute for Research, Washington, DC, October 23, 2013. Presentation slides are on file with the authors.

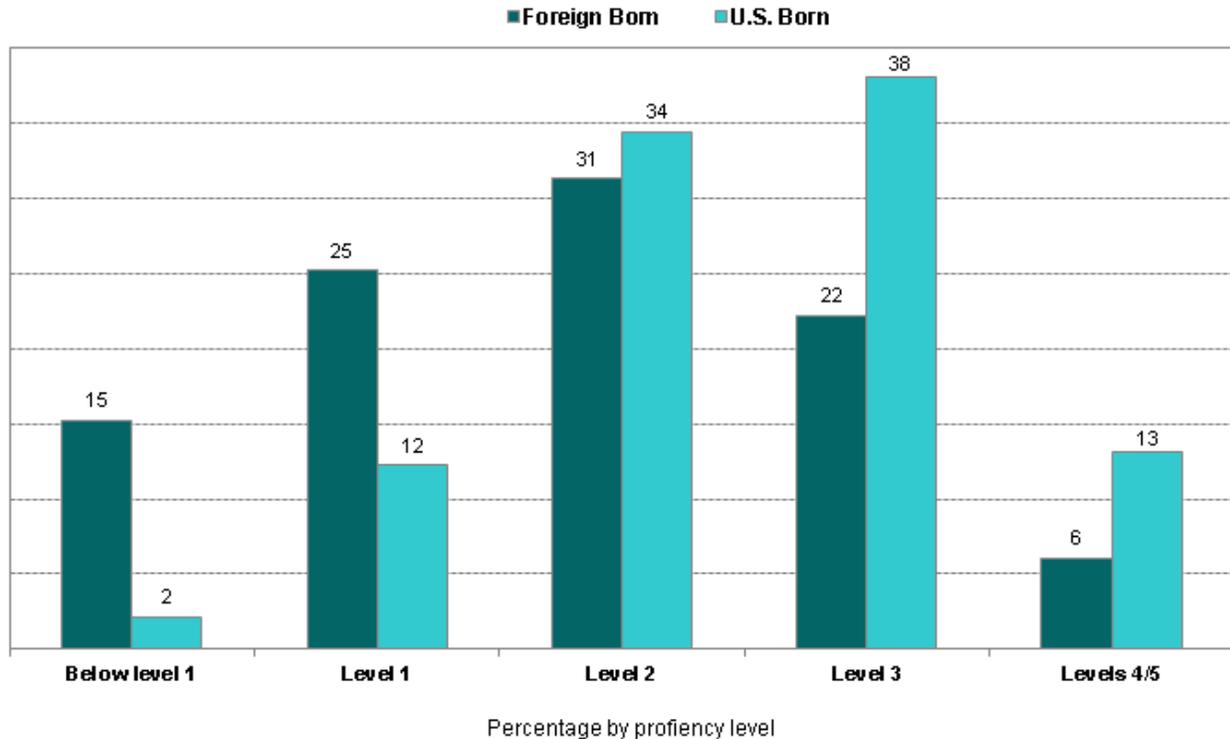
<sup>29</sup> OECD, *Time for the U.S. to Reskill?*

<sup>30</sup> OECD, *Skills Outlook 2013*.

Figure 1). Translated into years of education, the 36-point gap suggested that immigrants lagged natives by at least five years of education.

*English Literacy and Numeracy Skills by Nativity.* Adults who scored at the lowest levels (Level 1 and below) are most at risk as they have very limited ability to evaluate and use written material in English and work with numbers in English.<sup>31</sup> Close to 24 million (or 14 percent) of the U.S.-born adults and 11.5 million (or 40 percent) of immigrant adults scored at Level 1 or below on English literacy (see Figure 2).

**Figure 2. Percentage of U.S.-Born and Foreign-Born Adults Ages 16 to 65 at Each Proficiency Level in English Literacy**



Source: Migration Policy Institute analysis of the 2012 PIAAC data.

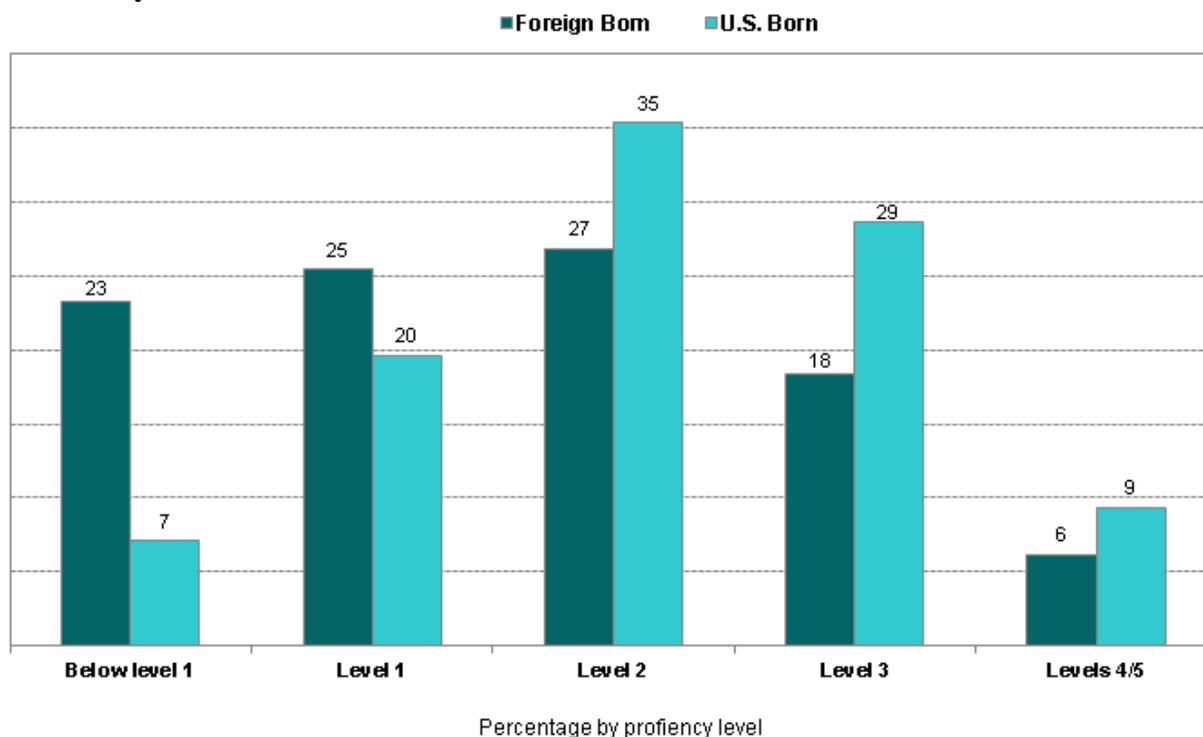
In terms of literacy, about a third of both immigrants and natives scored at Level 2, which roughly corresponds to the skills of those with middle and high school education. The OECD defines performers at Levels 3 or higher as adults who have the skills needed to function well in the modern society. In the United States, 51 percent of native but only 28 percent of immigrant adults had Level 3 or above literacy skills.

The size of the low-proficient population in *numeracy* was even greater: 44.3 million U.S.-born adults (or 27 percent) and nearly 14 million (48 percent) immigrants (see Figure 3). Put differently, about 36 million adults in the United States are unlikely to be able to read a newspaper article in English and compare two

<sup>31</sup> About 4 percent of U.S. adults (in the PIAAC weighted sample) were not able to provide enough background information to impute proficiency scores due to literacy-related reasons. See OECD, *Skilled for Life? Key Findings from the Survey of Adult Skills*, [http://www.oecd.org/site/piaac/SkillsOutlook\\_2013\\_ebook.pdf](http://www.oecd.org/site/piaac/SkillsOutlook_2013_ebook.pdf).

different points of view discussed in the article. Similarly, 58 million adults are unlikely to be able to identify the year with the lowest birth rate on a graph showing birthrates over time.

**Figure 3. Percentage of U.S.-Born and Foreign-Born Adults Ages 16 to 65 at Each Proficiency Level in Numeracy**



Source: Migration Policy Institute analysis of the 2012 PIAAC data.

While immigrants represented 15 percent of the U.S. adult 16-65 population, they accounted for twice that share (33 percent) of U.S. adults with low English literacy skills and 24 percent of those with low numeracy skills. Immigrants represented only 7 percent of the high-performers on literacy (Levels 4 and 5) and 10 percent on numeracy.

*Problem-Solving Skills by Nativity.* Close to 60 percent of natives and 76 percent of immigrants struggle with using digital technology and other communications tools to access, use, and communicate information online (i.e., they scored below Level 2). In absolute numbers, these results meant that almost 100 million U.S. adults are unlikely to be able to organize their emails into folders.<sup>32</sup> Moreover these results probably understate how limited U.S. adults’ digital proficiency is, as about 16 percent of PIAAC participants were excluded from the problem-solving assessment due to lack of computer skills.<sup>33</sup>

**U.S. average scores overall are only marginally affected by immigrants’ low scores.**

One question these results raise is to what extent the low scores of U.S. immigrants contribute to low proficiency outcomes among all U.S. adults. In other words, are immigrants dragging down the nation’s

<sup>32</sup> American Institutes for Research, *What the Data Say*.

<sup>33</sup> Kirsch, *PIAAC: Overview and Selected Results*.

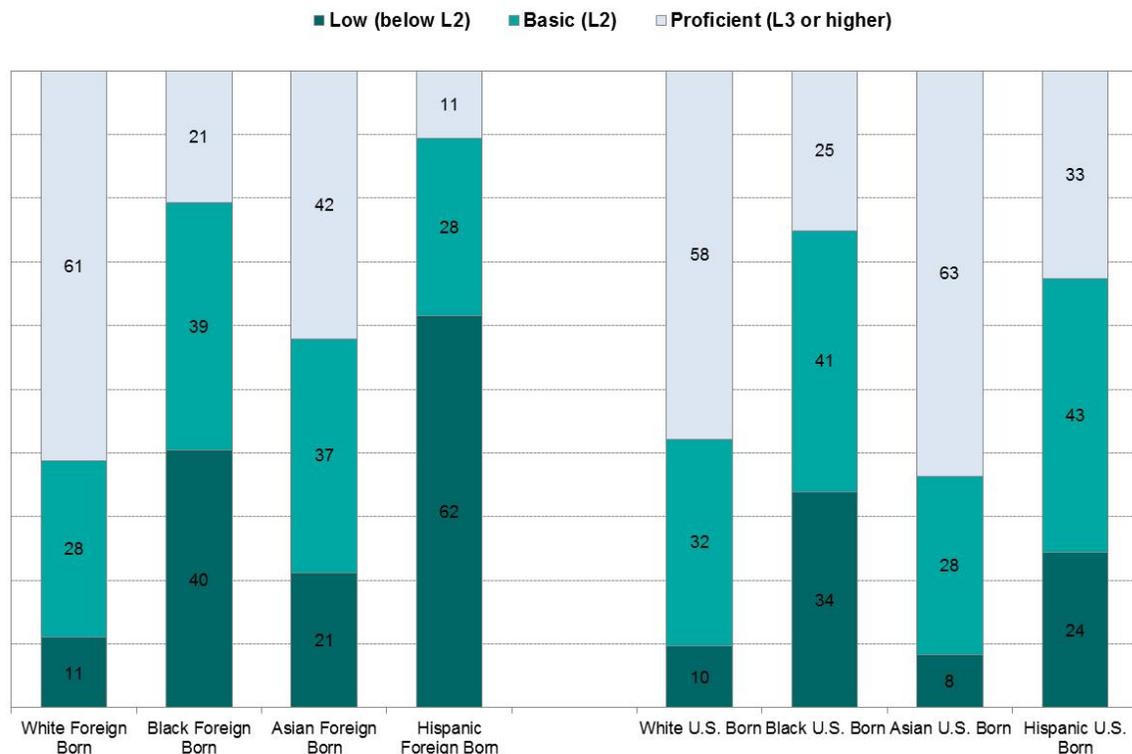
overall proficiency scores? As Figure 1 indicates, the average literacy score for the overall U.S. adult population was 270 while the average score for U.S.-born adults was 275. Immigrants, then, could be viewed as reducing overall scores by 5 points. Even if immigrant scores were excluded altogether, natives’ score of 275 would still fall below the “proficient” cut point of 276. Along similar lines, the inclusion of immigrant sample decreases the overall U.S. adult sample by 5 points on numeracy (from 258 of U.S.-born adults to 253 of the U.S. all adults).

### A. Immigrant-Native Skill Differences by Key Demographic Characteristics

**Skill gaps vary by race and ethnicity: close to 90 percent of Hispanic immigrants were not proficient in English literacy compared to 39 percent of white immigrants; U.S.-born Hispanics outperformed their immigrant counterparts.**

PIAAC data also show that skill gaps vary widely by race and ethnicity with white and Asian immigrants and natives outscoring their black and Hispanic counterparts (see Figure 4). The distribution of proficiency scores for white and blacks are roughly similar for both immigrant and natives. This pattern did not hold for Asians and Hispanics, as natives’ scores were substantially higher than immigrants’. Thus, while 62 percent of Hispanic *immigrants* scored at very low levels, that share fell steeply to 24 percent for Hispanic *natives*. Along similar lines, while 42 percent of Asian *immigrants* were proficient in literacy, 63 percent of Asian *natives* were proficient. These patterns suggest a kind of intergenerational progress among Hispanics and Asians that we report later in this paper.

**Figure 4. Percentage of U.S.-Born and Foreign-Born Adults Ages 16 to 65 at Each Proficiency Level in English Literacy by Race/Ethnicity**

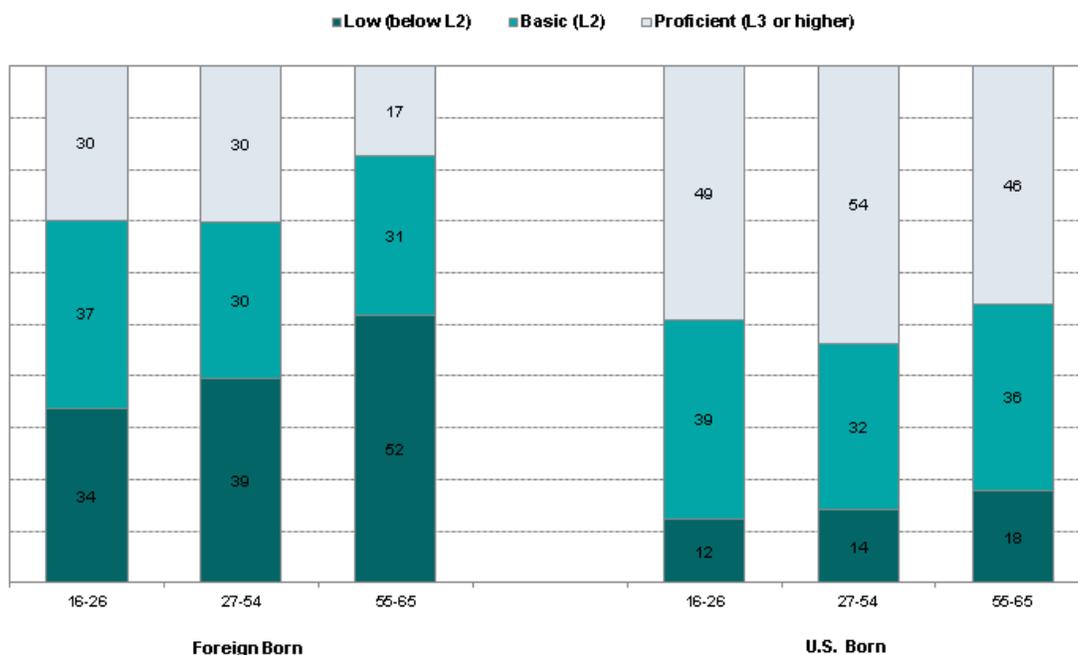


Source: Migration Policy Institute analysis of the 2012 PIAAC data.

**Younger immigrants had stronger skills than older immigrants, while younger natives only barely outperformed their older counterparts.**

The future of the U.S. economy will depend in large measure on the skills of the incoming generations of workers. A comparison of the literacy skills of the 16-26 population (new workers) and those on the verge of retirement (ages 55-65) shows that the literacy skills of young native adults were only marginally better than the cohort they will replace. Forty-nine percent of new native workers scored proficient or above on the literacy assessment versus 46 percent of the soon-to- retire native workers (see Figure 5). The skill difference between younger and older immigrants was wider: 30 percent of young immigrant adults were proficient in literacy compared to 17 percent of their 55-65 year old counterparts, suggesting some improvement in the skills of the labor force replacement population among immigrants.

**Figure 5. Percentage of U.S.-Born and Foreign-Born Adults Ages 16 to 65 at Each Proficiency Level in English Literacy by Age Group**

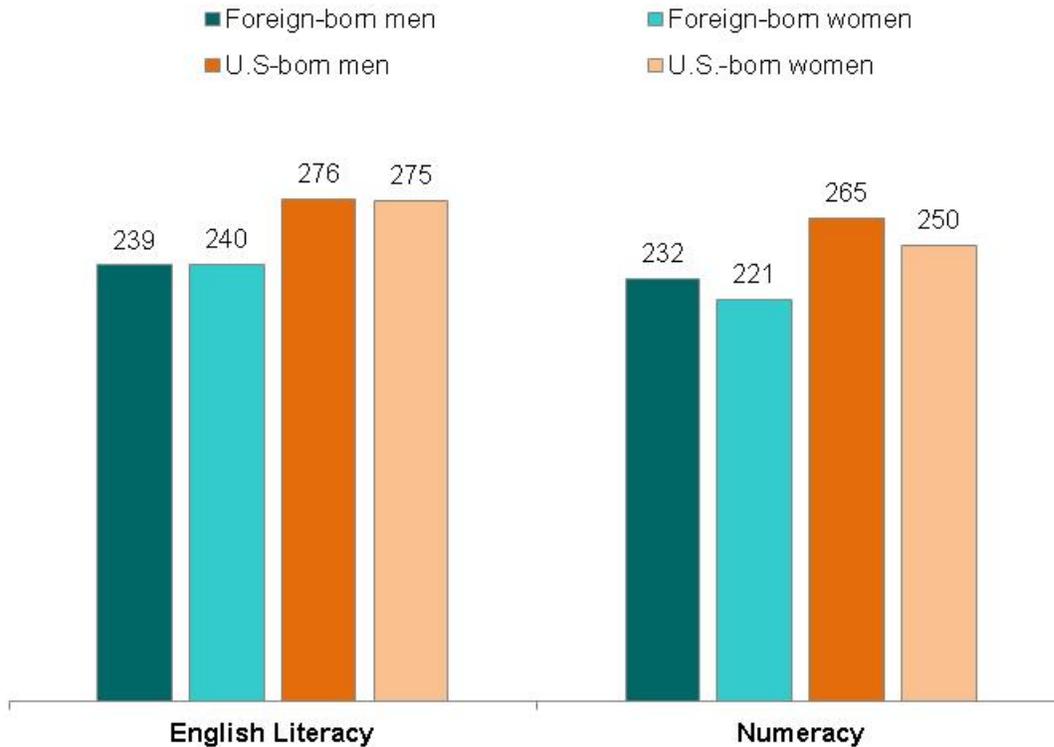


Source: Migration Policy Institute analysis of the 2012 PIAAC data.

**On average, there was little difference in the English literacy of men and women within native and immigrant populations.**

While men and women often differ in terms of their educational and employment outcomes, their English literacy skills were similar (and did not differ statistically) (see Figure 6). We find this for both immigrant and native populations. However, women’s average numeracy scores were somewhat lower than their male counterparts, with the difference being statistically significant for U.S.-born adults.

**Figure 6. Average English Literacy and Numeracy Scores of U.S.-Born and Foreign-Born Adults Ages 16 to 65 by Gender**



*Note:* Gender differences in average scores were not statistically significant for immigrant adults on both domains and for native-born adults on literacy. The observed skill gap between native men and women on numeracy (265 versus 250) was statistically significant at 0.05 level.

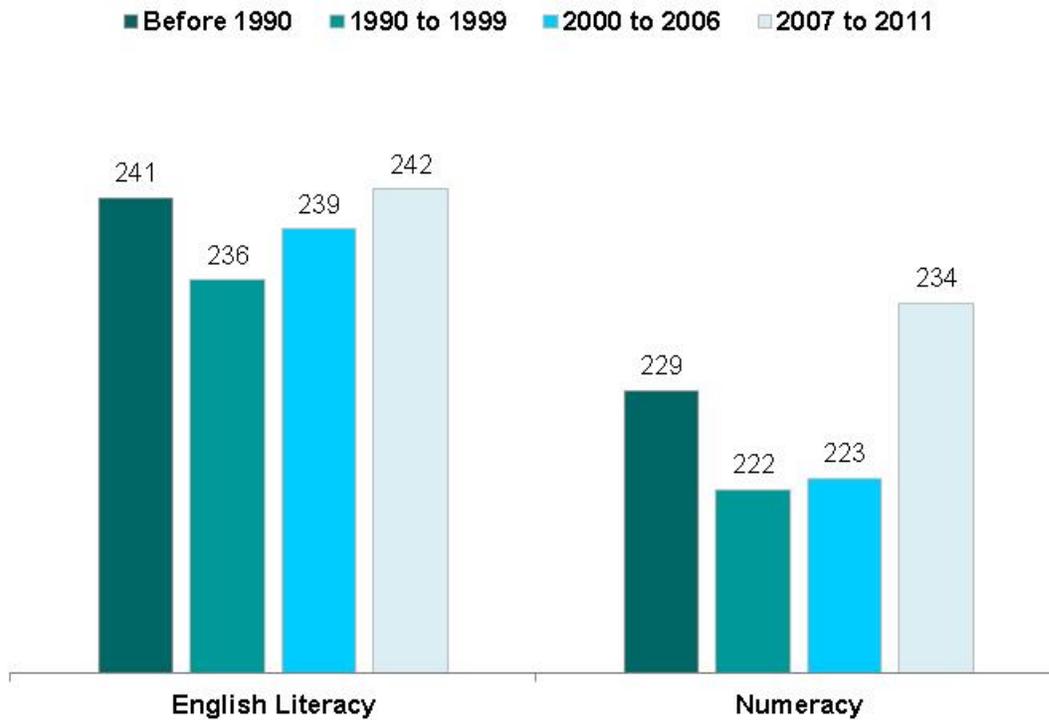
*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

**Immigrants arriving in the United States between 2007 and 2011 appear to have similar English literacy and numeracy skills to those who entered earlier.**

Since the PIAAC assessment is essentially a test of literacy and numeracy skills in English, one might predict that recently arrived immigrants would have lower skills than those who have lived in the country for some time, with presumably greater exposure to English. However, the average literacy and numeracy scores of immigrants who arrived in 2007 or later—the period that coincided with the 2007-2009 Great Recession and early post-recession recovery—did not differ significantly from those of earlier immigrants (see Figure 7).

One possible explanation is the higher share of advanced-degree college graduates (24 percent) among those who arrived since 2007. In contrast, the share of adults with advanced degrees among immigrants arriving in earlier periods was lower: 12-13 percent among immigrants arriving in the 2000-2006 period and in the 1990s, and 17 percent among immigrants arriving prior to 1990. Thus, factors such as a tighter U.S. labor market, an improving Mexican economy, and a related decline in unauthorized migration likely contributed to a rise in the human capital of post-recession migration flows to the United States.

**Figure 7. Average English literacy and Numeracy Scores of Immigrant Adults Ages 16 to 65 by Period of Arrival in the United States**



*Notes:* Average English literacy and numeracy scores of immigrants who arrived in each of the three periods prior to 2007 were not statistically different (at 0.05 level) from the average scores of immigrants who arrived between 2007 and 2011.  
*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

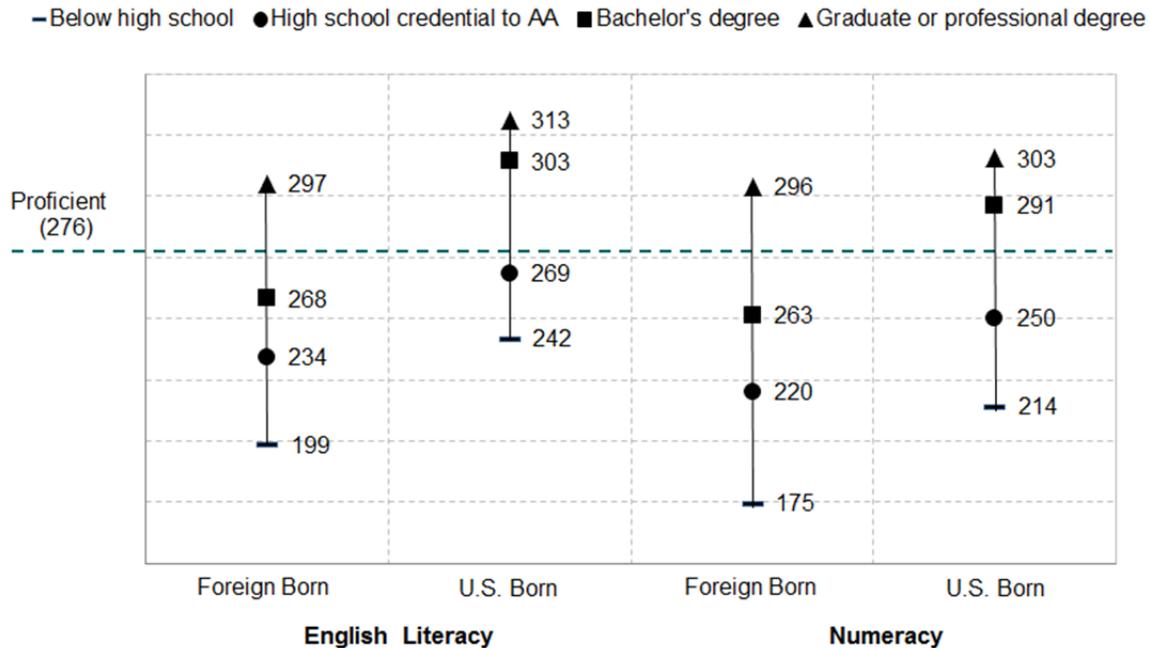
### ***B. Educational Attainment and Place of Education***

**Higher educated immigrants (and natives) had stronger English literacy and numeracy.**

In the United States, as in many other OECD countries, immigrants are overrepresented at both the lower- and higher-educated ends of the education continuum. Twenty-seven percent of the immigrant adults in the United States had less than a high school degree and 30 percent were college graduates in 2012 (versus 13 percent and 26 percent of the native born, respectively).

Education and competencies are strongly correlated as Figure 8 demonstrates. On literacy and numeracy assessments, the higher the educational attainment, the higher the average scores (with the differences being statistically significant for both immigrant and native adults). We find that the gap between literacy and numeracy averages of lower- and higher-educated adults was wider for immigrants than for natives. Immigrants’ proficiency generally lagged that of native born at the same educational levels. However, this skill gap narrowed for immigrants with advanced degrees.

**Figure 8. Average English Literacy and Numeracy Scores of U.S.-Born and Foreign-Born Adults Ages 16 to 65 by Educational Attainment**



*Notes:* Nativity gaps in average scores within each educational level are statistically significant (at 0.05 level) on both English literacy and numeracy. The only nativity difference that is not statistically significant is in numeracy scores for those with advanced degrees (296 versus 303). Regardless of nativity, adults scored higher on literacy and numeracy as their educational attainment increased. In each case the results are statistically significant.

*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

However, our analysis of PIAAC data shows that educational attainment did not fully explain adults' skills.<sup>34</sup> For instance, even among the native population, 13 percent of advanced degree holders and 22 percent of the bachelor's degree holders scored below proficient on literacy and even higher shares scored below proficient on numeracy (24 percent and 33 percent, respectively). Twenty-eight percent of immigrants with graduate degrees and 54 percent of those with bachelor's degrees scored below proficient on both English literacy and numeracy in English; a result that may partially explain comparatively high levels of underemployment among college-educated immigrants in the United States.

**Immigrants with U.S.-earned education had English literacy and numeracy scores similar to their U.S.-born counterparts.**

We find that 44 percent of all immigrants (ages 16-65) in PIAAC earned their highest educational qualification in the United States.<sup>35</sup> The share among college-educated adults 25 and older was even

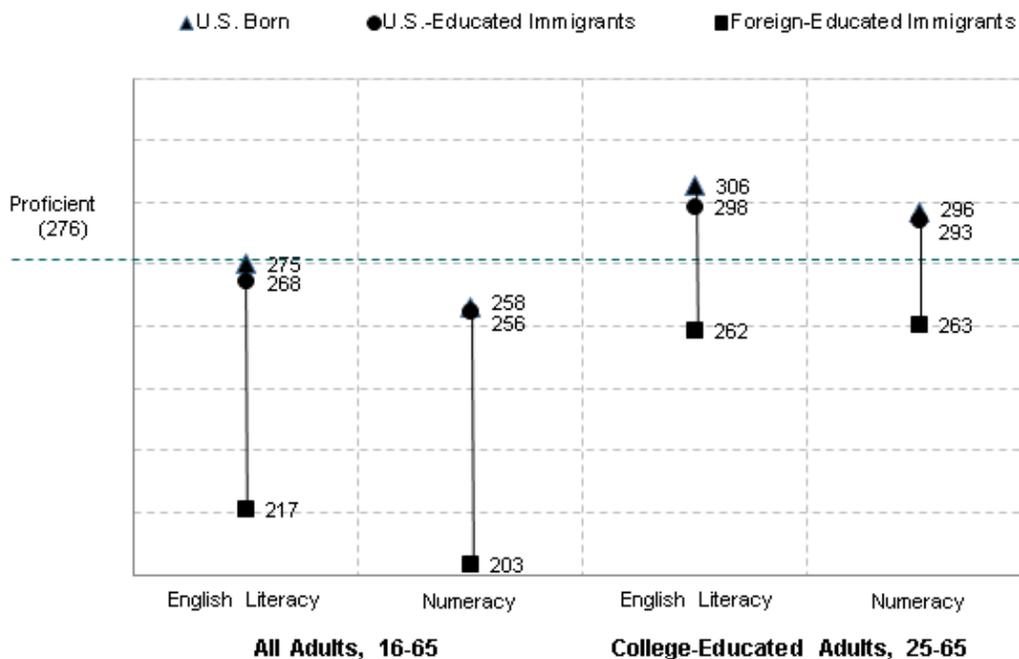
<sup>34</sup> See also, Sara Bonfati and Theodora Xenogiani, "Migrants' Skills: Use, Mismatch and Labour Market Outcomes. A First Exploration of the Survey of Adult Skills (PIAAC)", in *Matching Economic Migration with Labour Market Needs*, (Paris: OECD, 2014); Harry J. Holzer and Robert I. Lerman, *Cognitive Skills in the U.S. Labor Market: For Whom Do They Matter?* (Presented at "Taking the Next Step with PIAAC: A Research-to-Action" Conference, December 11-12, 2014, Arlington, VA).

<sup>35</sup> Although the PIAAC background survey included a question about one's place of education, the results revealed many missing data. Following an OECD approach as outlined in Bonfati and Xenogiani's "Migrants' Skills"

higher: 59 percent. Our own and other research demonstrates that having a U.S.-earned degree boosts immigrants’ opportunities for better employment and higher wages.<sup>36</sup> PIAAC data also show that immigrants with U.S. degrees scored significantly higher than foreign-educated immigrants (see Figure 9).

In the case of college-educated immigrants, differences related to the place of education (U.S.-educated versus foreign-educated) were especially wide in English literacy (26 points) and numeracy (30 points). At the same time, U.S.-educated immigrants’ average scores approximated those of their U.S.-born counterparts on both literacy and numeracy assessments.

**Figure 9. Average English Literacy and Numeracy Scores of All U.S.-Born and Foreign-Born Adults Ages 16 to 65 and College-Educated Adults Ages 25 to 65 by Place of Education**



*Notes:* The differences in literacy and numeracy between foreign-educated immigrants and U.S.-born adults are statistically significant at 0.05 level for both total and college-educated adults. The differences in scores between U.S.-born and U.S.-educated immigrants are not statistically significant, except those for literacy of the college-educated group (306 versus 298).  
*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

chapter, we created a “foreign-earned” qualification by comparing the year when immigrant respondents obtained their highest degree to the year of their arrival in the United States. If the difference was at least one year, then we assumed that the degree was earned in the United States. One limitation of this approach is that it may misclassify immigrants who obtained a degree in the United States, left for a while and then came back while reporting only the last year as their date of immigration. Another limitation is that we cannot estimate the number of U.S.-born adults who earned their degrees abroad, a number that remains small but is on the rise.

<sup>36</sup> Jeanne Batalova and Michael Fix (with Peter Creticos), *Uneven Progress: The Employment Pathways of Skilled Immigrants in the United States*, (Washington, DC: Migration Policy Institute, 2008), <http://migrationpolicy.org/research/uneven-progress-employment-pathways-skilled-immigrants-united-states>; Neeta P. Fogg and Paul E. Harrington, *Labor Market Underutilization Problems among College-Educated Immigrants in the United States*, (Philadelphia, PA: Center for Labor Markets and Policy, Drexel University, 2013), [http://www.drexel.edu/provost/clmp/docs/clmpimmigrant\\_underutilization\\_summary\\_paper\\_final.pdf](http://www.drexel.edu/provost/clmp/docs/clmpimmigrant_underutilization_summary_paper_final.pdf).

### C. Immigrant Generation

The analysis above shows that immigrants by and large had lower competencies in English than the native born. This is not a surprising finding given that PIAAC assesses skills in English. The expectation is that with time the level of English literacy will rise as immigrants make strides in their social, economic, and linguistic integration. One marker of successful immigrant integration is how well immigrants' U.S.-born children are doing.<sup>37</sup> By asking the birth country of respondents' parents, PIAAC allows researchers to explore the progress of the second generation. Put differently, the survey's results can be used to probe whether having an immigrant background represents a risk factor for developing core proficiencies.

**English literacy and numeracy skills of U.S.-born adults from immigrant families were similar—and, by extension, similarly mediocre—as those from U.S.-born families.**

There is a broad sociological literature demonstrating that significant differences in educational and economic outcomes exist not only between immigrants and U.S.-born children of immigrants (first versus second generation), but also *within* the first generation.<sup>38</sup> Research shows that immigrants who arrive as children under 13 (referred as the 1.5 generation) are more likely to graduate from high school, have stronger English skills, and pursue postsecondary education than those who arrive as adults.<sup>39</sup> Taking into account the complexity of immigrant generation, Figure 8 arrays English literacy levels for four groups of adults:

- Immigrants who arrived when they were 13 or older (the first generation);
- Immigrants who arrived before age 13 (the 1.5 generation);
- U.S.-born adults with at least one immigrant parent (the second generation); and
- U.S.-born adults with native-born parents (the third/plus generation).

PIAAC data confirm that there are marked generational differences in literacy (see Figure 10, left panel) and numeracy (Figure 10, right panel), and reveal clear patterns of intergenerational progress.

There is a steady progression in proficiency from the first generation (24 percent) to the 1.5 generation (37 percent) to the second generation (51 percent). Moreover, the literacy levels of the second generation were nearly identical to those of third/plus generation. The data also highlight the fact that while the second generation may catch up to third/plus generation, both groups' proficiency levels remain relatively low.

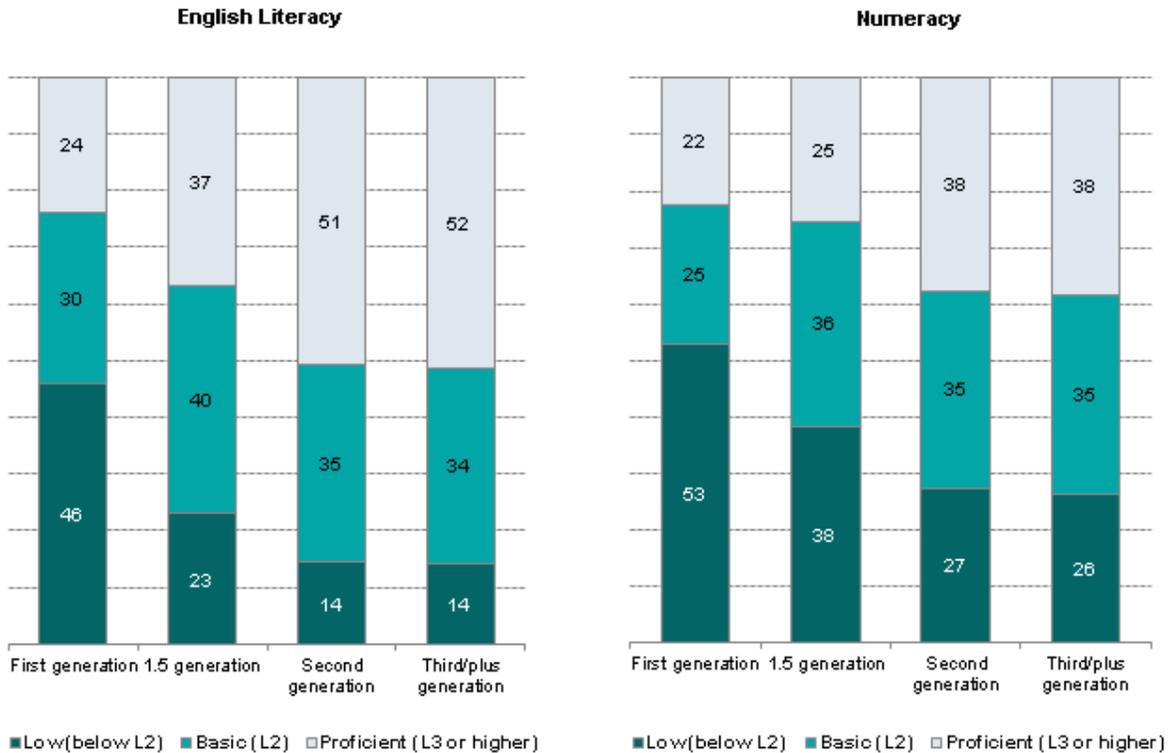
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<sup>37</sup> Michael Fix (ed), *Securing the Future: U.S. Immigrant Integration Policy, A Reader*, (Washington, DC: Migration Policy Institute, 2007), <http://migrationpolicy.org/research/securing-future-us-immigrant-integration-policy-reader>.

<sup>38</sup> Rubén G. Rumbaut, "Ages, Life Stages, and Generational Cohorts: Decomposing the Immigrant First and Second Generations in the United States." *International Migration Review*, 2004, 38(3), pp. 1160-1205.

<sup>39</sup> Rubén G. Rumbaut, "Generation 1.5, Educational Experiences." In James A. Banks, ed., *Encyclopedia of Diversity in Education*, (New York, NY: Sage Publications, 2012).

**Figure 10. Percentage of Adults Ages 16 to 65 at Each Proficiency Level in English Literacy and Numeracy by Generational Status**



Source: Migration Policy Institute analysis of the 2012 PIAAC data.

**Parent education is a better predictor of immigrants’ proficiency than that of natives’.**

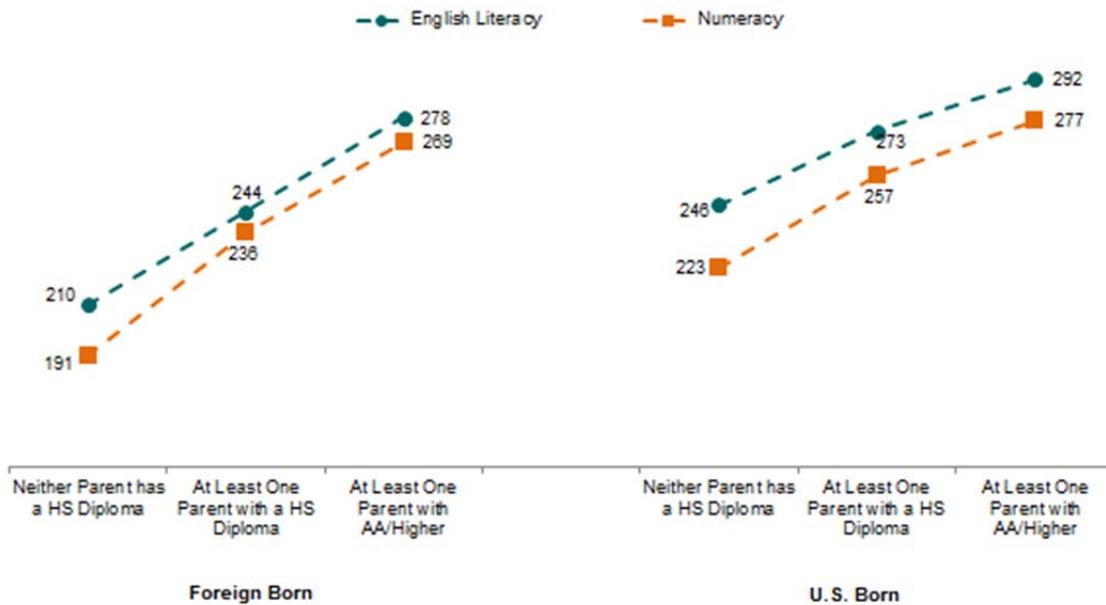
Earlier research using PIAAC showed that adults from disadvantaged backgrounds (defined as having less-educated parents) had very low literacy and numeracy skills across all OECD countries,<sup>40</sup> with socio-economic background being more highly correlated with proficiency levels in the United States than other developed countries.

We find that this strong correlation between parent education and adult literacy and numeracy holds for both immigrants and natives (see Figure 11). Having at least one parent with an Associate’s or higher degree meant that both immigrants (on literacy) and natives (literacy and numeracy) reached the 276 point level: the cut point for proficiency.

Figure 11 indicates that there was a wider range in proficiency scores between immigrants with low- and highly-educated parents than for natives, suggesting that parent education may have an even greater impact on English skill development for immigrants than for the U.S. born.

<sup>40</sup> OECD, *Survey of Adult Skills: First Results, United States Country Note*, <http://www.oecd.org/site/piaac/Country%20note%20-%20United%20States.pdf>

**Figure 11. Average English Literacy and Numeracy Scores of U.S.-Born and Foreign-Born Adults Ages 16 to 65 by Parental Education**



*Notes:* Within both immigrant and native populations, average scores were higher and statistically significant as the education of their parents increased.

*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

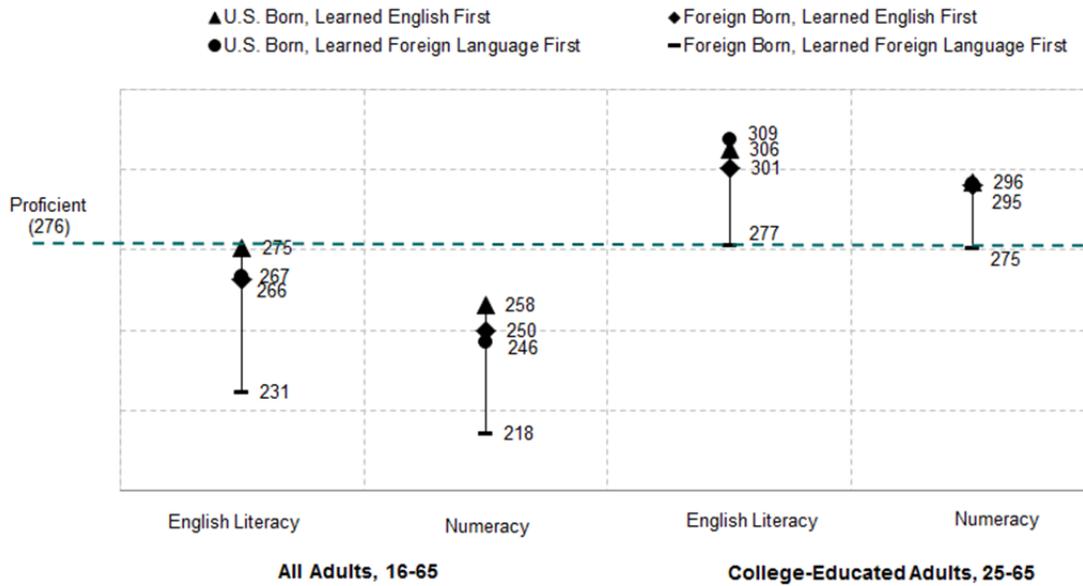
#### *D. Language Spoken and Language Abilities*

**For U.S.-born adults, learning a foreign language as a child does not appear to be an obstacle to English language literacy and numeracy.**

In addition to generational status, PIAAC asked survey participants a series of language-related questions, including the languages they learned as children and how well they speak, read, understand, and write in English as adults. About 25 percent of immigrants learned English as children; 75 percent learned a foreign language. Keeping in mind that the PIAAC assessed English competency, we find that immigrants who learned a foreign language as children had the lowest average scores on literacy and numeracy (see Figure 12, left panel). However, the scores of U.S.-born adults who learned a foreign language as children approximated the scores of their English-only U.S.-born peers', as did those of immigrants who learned English as children.

Among college-educated adults, the average scores on literacy and numeracy went up by 20-30 score points for all four groups (see Figure 12, right panel). Also, the average scores evened out for both U.S.-born groups and immigrants who learned English as children. Taken together, this set of results suggests that learning a foreign language first is not a barrier to becoming proficient in the domains tested by PIAAC among U.S.-born adults.

**Figure 12. Average English Literacy and Numeracy Scores of All U.S.-Born and Foreign-Born Adults Ages 16 to 65 and of College-Educated Adults Ages 25 to 65 by English/Foreign Language Learned as a Child**



*Notes:* The average scores on literacy and numeracy were not statistically different between U.S.-born adults who learned English first and those who learned a foreign language first; except on numeracy among total adults (258 versus 250). Among the college educated, the scores of immigrants who learned English first as children were not statistically different from those of U.S.-born adults who learned English first. In contrast, all English literacy and numeracy scores of immigrants who learned a foreign language first as children were lower than, and statistically different from, those of the U.S.-born adults.  
*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

**Self-reported data on how well respondents *speak* English correlated closely with PIAAC’s directly tested literacy and numeracy skills. There was wide variation in the tested proficiency levels of respondents who have been classified as limited English proficient.**

The background questionnaire to the PIAAC asks respondents to report how well they speak, read, write, and understand English. Like the U.S. Census Bureau’s ACS (which is widely used in immigration research), respondents’ options on PIAAC fall along a continuum that includes: “speak only English”, speak English “very well,” “well”, “not well” and “not at all”. Respondents answering “well”, “not well” and “not at all” are classified by the Census Bureau as being Limited English Proficient (LEP), a classification that has powerful implications for how federal funds are distributed for language instruction and language access. The question is *how valid is this definition?*

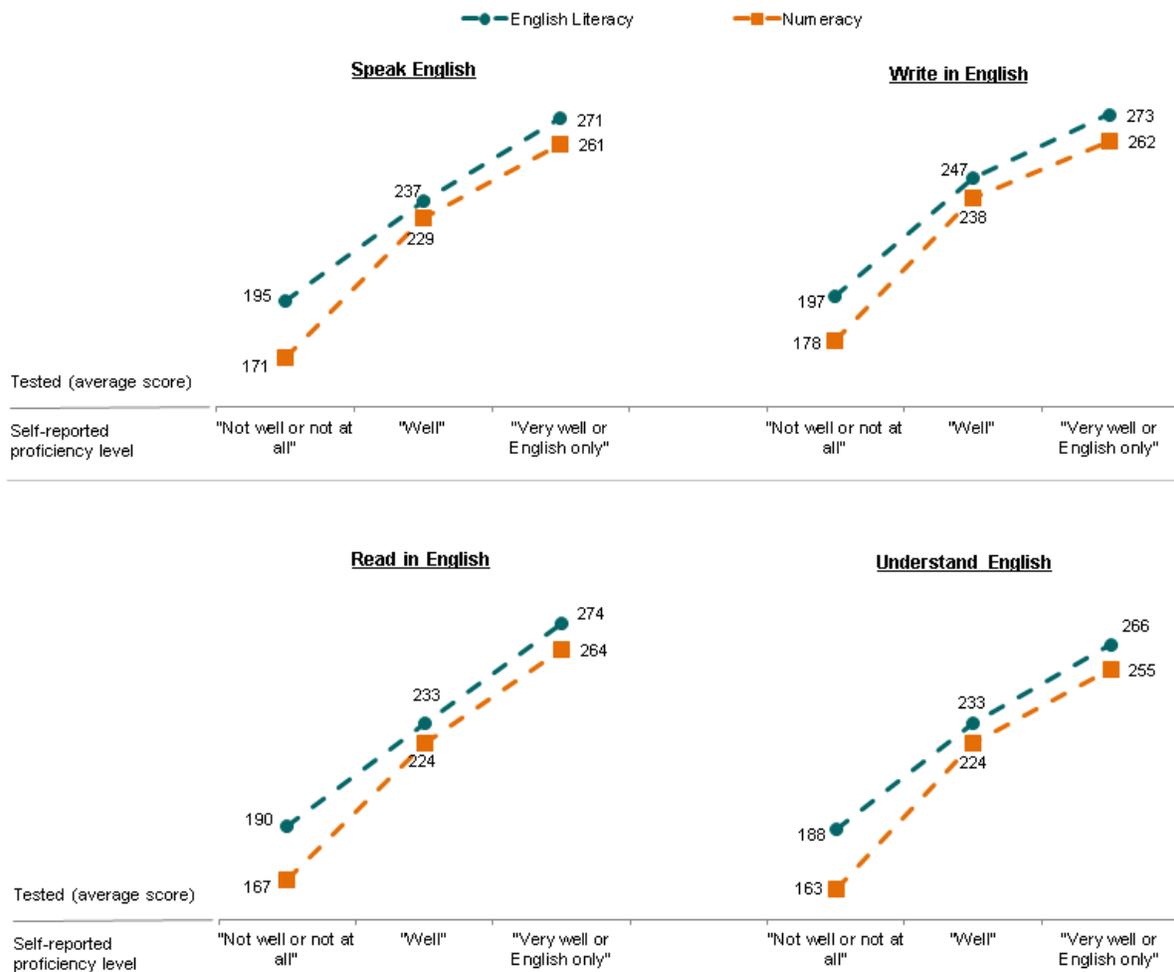
The PIAAC provides an opportunity to examine the actual proficiency of respondents who reported that they were LEP. It also offers an opportunity to revisit the results of our earlier work in which we find that respondents who reported speaking English “not well” or “not at all” (low proficiency) differed significantly from those reporting they spoke English “well” (moderate proficiency) in terms of their educational attainment, naturalization levels, occupational distribution, and poverty rates.<sup>41</sup> According to

<sup>41</sup> Jeanne Batalova and Michael Fix, “Profile of Limited English Proficient Immigrants,” *Peabody Journal of Education* 85 (4): 511-34.

PIAAC data, between a quarter and a third of immigrant adults reported writing, understanding, reading, and speaking English “well” or at this moderate level.

Figure 13 indicates that the tested literacy and numeracy proficiency levels rise in parallel with the self-reported English language skills of PIAAC respondents: a result that could be seen to validate other surveys’ (such as the Census Bureau’s ACS) use of *spoken* English ability to test English literacy. In addition, the tested results for respondents’ spoken English language abilities largely mirror those for reading, speaking and understanding English, suggesting that speaking ability may be a good proxy for proficiency in these other domains.

**Figure 13. Average English Literacy and Numeracy Scores of Foreign-Born Adults Ages 16 to 65 by Proficiency in Speaking, Reading, Writing, and Understanding English**



*Notes:* Proficiency in English refers to how well PIAAC’s immigrant respondents reported that they speak, write, read, and understand English. Immigrants with “low proficiency” are those who reported that they speak, write, read, and understand English “not well” or “not at all;” those with “moderate proficiency” speak, write, read, and understand English “well;” those with “high proficiency” speak, read, write, and understand English “very well” or “English only.” All differences by proficiency on both literacy and numeracy were statistically significant at 0.05 level.

*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

Further, as Figure 13 indicates, there is a wider gap in both numeracy and literacy between respondents who report speaking English “not well” or “not at all” (low) and those reporting that they speak English

“well” (moderate) than between those with moderate and high self-reported English skills. These results reinforce our earlier analyses that suggested that immigrants with low levels English proficiency need more intensive and perhaps differing language and education support than those who report speaking English “well”, despite the fact that all are classified as being LEP for purposes of federal policy. According to PIAAC data, roughly 7.8 million or a quarter of immigrant adults reported speaking or reading English “not well” or “not at all;” about a third (or 10.1 million) reported that they write in English at the same low level.<sup>42</sup>

### *E. Labor Force and Economic Outcomes*

#### **Immigrants with low English literacy and numeracy proficiency were more likely to be employed than their native counterparts.**

Previous research has demonstrated a strong correlation between skills and education and economic outcomes. It has also showed that immigrants often had higher rates of employment than their native-born counterparts. Using PIAAC data, we examine the employment rates and average monthly wages of immigrant and native workers taking into account their literacy and numeracy skills and education.

We find that while higher literacy and numeracy skills meant higher rates of employment for natives (see Table 2), employment among immigrants did not differ statistically by proficiency level. In fact, immigrants with the lowest levels of proficiency on literacy and numeracy were employed at a significantly higher rate (75 percent) than their native counterparts (59 percent).

Unlike employment, literacy and numeracy skills were strongly associated with differences in income among both immigrants and natives. We find that, on average, as adults’ proficiency increased, so did their monthly wages.<sup>43</sup> Immigrant and native full-time workers who were proficient in literacy and numeracy earned double (about \$6,000 versus \$3,000 per month) the wages of their respective counterparts with low skills (below Level 2). Adults who were proficient, on average, earned \$36,000 more per year than their low-skilled counterparts.

Although immigrants in general earned less than natives (about \$4,000 versus \$4,600 per month), once we took into account workers’ literacy and numeracy levels differences, for the most part, become statistically insignificant. The findings regarding the relationship between skills and labor market outcomes highlight the fact that while immigrants are able to find employment regardless of their proficiency, they need higher levels of English competencies to be paid well—and on a par with natives—for their work in the U.S. labor market.

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<sup>42</sup> A smaller share of immigrant adults (about 22 percent or 6.3 million) reported they understand English less than “well.”

<sup>43</sup> For the purposes of our analysis of the relationship between skills and education and wages, we limited our sample to full-time workers ages 16-65 who earned at least \$500 but no more than \$20,000 per month including bonuses.

**Table 2. Share Employed and Average Monthly Wages of U.S.-Born and Foreign-Born Workers Ages 16 to 65 by Skills and by Educational Attainment**

	Share employed of the total 16-65 population						Average monthly wages (\$)*				
				Statistically significant from the lower proficiency/educational level?						Statistically significant from the lower proficiency/educational level?	
	Foreign born	U.S. born	Statistically significant from U.S. born?	Foreign born	U.S. Born		Foreign born	U.S. born	Statistically significant from U.S. born?	Foreign born	U.S. Born
<b>Estimate</b>	76%	73%	no				4,075	4,596	yes		
<b>English Literacy</b>											
Low (below L2)	75%	59%	yes				2,834	3,054	no		
Basic (L2)	74%	68%	no	no	yes		4,082	3,587	no	yes	yes
Proficient (L3 or higher)	79%	80%	no	no	yes		5,900	5,408	no	yes	yes
<b>Numeracy</b>											
Low (below L2)	74%	59%	yes				2,990	3,060	no		
Basic (L2)	74%	72%	no	no	yes		3,969	3,844	no	no	yes
Proficient (L3 or higher)	83%	84%	no	no	yes		6,086	5,827	no	yes	yes
<b>Education</b>											
Less than high school	71%	45%	yes				2,055	2,499	yes		
High school degree	75%	72%	no	no	yes		3,606	3,536	no	yes	yes
Associate	-	79%	-	-	yes		-	4,429	-	-	yes
Bachelor	76%	86%	yes	-	yes		4,826	5,883	yes	-	yes
Graduate	87%	89%	no	yes	no		7,408	7,350	no	yes	yes

Notes: \*Average gross monthly earnings (including bonuses) of full-time workers ages 16 to 65 who earned between \$500 and \$20,000 per month in their current job. “-” the sample size was too small to produce reliable estimates.

Source: Migration Policy Institute analysis of the 2012 PIAAC data.

Table 2’s bottom section shows the relationship between educational attainment and employment and wages. The results are essentially the same as observed earlier for both immigrant and native populations, except for the following: Immigrants with less than high school education were much more likely to be employed than natives (71 percent versus 45 percent), but they earned about \$440 less per month. Immigrants with a bachelor’s degree were less likely than their native counterparts to be employed (76 percent versus 86 percent), and they earned \$1,000 less per month. In contrast, immigrants and natives with advanced degrees had similar employment rates and monthly wages. It appears then, that for immigrants a bachelor’s degree alone provides a lower return on investment in terms of employment or wages than an advanced degree.

**Regardless of nativity, adults with lower literacy were less likely to participate in ongoing learning.**

PIAAC asked respondents to answer a number of questions related to their learning activities including whether they studied for any formal degree or certificate part or full time, or participated in any other organized learning activities in the past 12 months. Overall 38 percent of immigrant adults and 50 percent of natives reported that they engaged either in formal education or another organized learning within the past year (see Table 3). Natives then were significantly more likely to continue their learning than immigrants.

**Table 3. Percentage of U.S.-Born and Foreign-Born Adults Ages 16 to 65 Who Participated in Formal Education or other Organized Learning Activities during the Last 12 Months by English Literacy Proficiency Level**

	Share who participated in learning activities during the last 12 month				
				Statistically significant from the lower proficiency level?	
	Foreign born	U.S. born	Statistically significant from U.S. born?	Foreign born	U.S. born
<b>Estimate</b>	38%	50%	yes		
<b>English Literacy</b>					
Low (below L2)	24%	29%	no		
Basic (L2)	41%	43%	no	yes	yes
Proficient (L3 or higher)	55%	61%	no	yes	yes

*Notes:* Formal education referred to programs that lead to a degree or certificate; other organized learning activities include courses conducted through open or distance education; organized sessions for on-the-job training or training by supervisors or co-workers; seminars and workshops; and other kinds of private lessons.

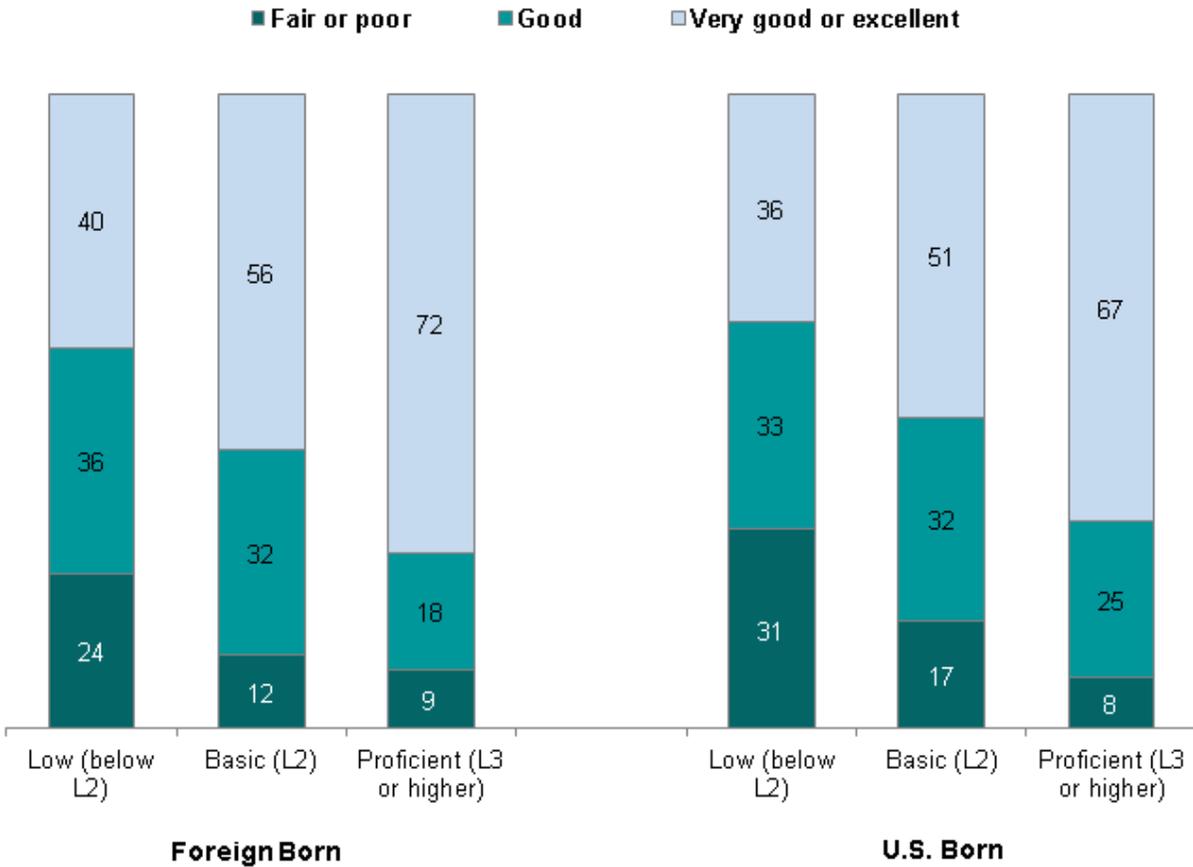
*Source:* Migration Policy Institute analysis of the 2012 PIAAC data.

However, once we took into account adults’ literacy proficiency, nativity differences became statistically insignificant. We find that both natives and immigrants who scored at Level 3 or above were twice as likely to participate in additional learning compared to low-skilled adults (below L2), reinforcing the axiom that learning begets learning.

#### **F. Health Outcomes**

Consistent with previous PIAAC research, we find that both immigrants and natives with lower literacy scores were more likely to report poor health (see Figure 14). Immigrants who scored at Level 1 or below were nearly three times more likely to say that their health was poor or fair than those who scored at Level 3 or higher (24 percent versus 9 percent). Native adults were even more likely to report poor or fair health (31 percent) if they scored at Level 1 or below.

**Figure 14. Self-Reported Health Status of U.S.-Born and Foreign-Born Adults Ages 16 to 65 by English Literacy Proficiency Level**



Source: Migration Policy Institute analysis of the 2012 PIAAC data.

## V. Comparing PIAAC to the ACS and CPS Data

PIAAC provides recent, rich data about directly-assessed skills of U.S. adults. Together with its extensive background questionnaire—that includes nativity, language proficiency, generation status, and other immigration-related questions—the survey represents an important analytical resource for the field of immigration and immigrant integration research. As we discussed in the PIAAC Data and Methodology section above, due to its survey design and implementation PIAAC is likely to exclude certain immigrants and limited English proficient adults non-randomly. These exclusions raise questions then about the degree to which the PIAAC sample of adults is representative of the U.S. immigrant adult population. Our analysis finds substantial comparability between PIAAC and the U.S. Census Bureau’s ACS and CPS, the two data sources often used in research about immigrants and their children in the United States. Specifically, we find that the respondents’ age distribution, race and Hispanic origins, and gender in the

PIAAC and the other surveys were largely similar (see Appendix A and Appendix B for comparative results).<sup>44</sup>

There is, however, some variation across the three surveys. PIAAC participants appear to be somewhat *less* likely to report being born outside of the United States (15 percent in PIAAC versus 18 percent in ACS). Foreign-born respondents to the PIAAC were somewhat *more* likely to report having a graduate-level degree than in the ACS (16 versus 11 percent) but *less* likely to report having arrived in the United States during the 2000-2012 period (29 versus 36 percent). Immigrant respondents to the PIAAC were more likely to report living with a spouse or partner than in the ACS (74 versus 58 percent). And immigrant respondents to the PIAAC were somewhat more likely to report being employed (76 percent) than immigrants surveyed by either ACS (69 percent) or CPS (67 percent.) In sum, when compared to the ACS, the PIAAC immigrant sample appears to be somewhat *less* likely to be recent arrivals and *more* likely to have an advanced degree and be employed. Thus, the PIAAC results reported below may slightly overstate proficiency levels of the U.S. immigrant adult population overall. The same can be said—but to a somewhat lesser degree—when it comes to the second generation.

## VI. Conclusion and Policy Implications

### A. Key Findings

In this paper we profile first- and second-generation adult respondents to PIAAC and examine key trends in their integration into the U.S. society. Our findings are consistent with earlier reported results on immigrant proficiency levels in the domains tested by the PIAAC: that is, scores for the foreign born lagged those of the U.S. born, which are themselves low by international standards. We also find high levels of racial and ethnic differences with Hispanic and black immigrants and natives performing at low levels.

Our results, however, do not establish that low overall U.S. results on the PIAAC can be laid at the doorstep of the nation’s foreign-born adults. When immigrants’ scores on literacy or numeracy proficiency were excluded, national test scores rose only 5 points on a 500-point scale, and remained below the relatively low bar of “proficiency.”

Viewing our results through an immigrant integration lens, several findings stand out. First, the most recent cohort of immigrants (i.e., those arriving between 2007 and 2011) had proficiency levels in English literacy and numeracy similar to those who arrived in earlier periods. This finding suggests that recent post-recession cohort included smaller shares of less educated, and a greater share of skilled immigrants.

We also find that while young natives (16-26) had proficiency levels that were only marginally higher than the older natives (55-64) they would be replacing in the labor market, the same was not true for younger immigrants whose proficiency levels were higher than older immigrants. Each of these findings suggests that there has been some improvement in immigrants’ human capital over time. Further, we find that while the first generation lagged the third-generation adults across all domains of proficiency, the second generation had caught up. It needs to be emphasized, though, that this intergenerational ascent represents a climb to a low level of proficiency by international standards.

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<sup>44</sup> We used both ACS and CPS because while ACS does not collect data by generation, CPS does.

Natives' employment and earnings rose with proficiency. But this pattern did not hold for immigrants who were much more likely to be employed at low proficiency levels than their low-proficient native counterparts—signaling immigrants' concentration in low-skill jobs. At the same time, the high levels of participation of these low-skill immigrant workers in the U.S. labor market (versus many other OECD countries) means that many are likely to participate in training and education if offered by employers, potentially providing an avenue to mobility. While immigrant adults were in general less likely to have participated in training programs in the past 12 months than natives, there was no statistically significant difference between the participation rates of native and immigrant adults within literacy proficiency levels.

Our results also confirm other studies that find that immigrants with foreign-earned academic credentials had lower English literacy and numeracy scores than those with U.S.-earned credentials. However, the average literacy and numeracy scores of immigrants with U.S.-earned credentials approximated those of their U.S.-born counterparts. Still, the fact that over half of the immigrants with Bachelor's degrees are not proficient in literacy or numeracy remains worrying.

These patterns are consistent with the larger, sobering trends revealed by the U.S. PIAAC data: low general levels of proficiency, deepening societal inequalities reflected by racial and ethnic differences, and the powerful effects of parent education (especially on immigrants); and much higher levels of poor self-reported health among respondents with low proficiency levels. That said, immigrants' exposure to the work place, the rising skills of new entrants, and patterns of intergenerational progress may offer levers for future action.

Finally, a threshold issue that our study explored is whether the PIAAC sample of adult immigrants resembled those used by the U.S. Census' American Community Survey and Current Population Survey. Our finding is that, overall, the immigrant populations sampled across the surveys were in large part similar, at least with regard to the key demographic variables such as age, gender, and race and Hispanic origin. These findings are significant because PIAAC excludes those with very low English language abilities from taking the psychometric tests in literacy, numeracy, and problem solving, raising questions about the PIAAC sample's representativeness for the U.S. immigrant population.

## ***B. Selected Policy Implications***

Although not a central focus of this descriptive paper, the PIAAC results hold several policy implications for immigrant integration.

**Higher English literacy and numeracy skills improve low-proficient immigrant adults' earnings:** According to our analysis of PIAAC data, roughly 40 percent of immigrant adults lacked basic English literacy skills and 48 percent lacked basic numeracy skills. Our study also identifies the severe wage penalty imposed by low education and low English skills as well as a significant immigrant-native wage gap differences in skills. As Smith and Fernandez demonstrate,<sup>45</sup> the differences in wages between natives and immigrants in the United States disappear once education, skills, and occupations are taken into account. Their findings suggest that to close the nativity wage gap, it is essential to raise education and skills of immigrants.

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<sup>45</sup> William Smith and Frank Fernandez, *Education and Wage Gaps: A Comparative Study of Immigrant and Native Employees in the United States and Canada* (Presented at "Taking the Next Step with PIAAC: A Research-to-Action" Conference, December 11-12, 2014, Arlington, VA).

PIAAC findings also suggest that recession-induced fiscal policies that have led to a 36-percent decline between 2007-08 and 2012-13 in enrollment for federally supported Adult English as a Second Language (ESL) classes,<sup>46</sup> need revisiting. The nation’s adult basic education (ABE) system, long a key, yet under-recognized element of the nation’s limited immigrant integration policies, has been further eroded by cuts at the state level. For example, in California, the state with the largest immigrant population in the nation, state enrollment in ESL programs fell by 55 percent between 2007-08 and 2012-13.<sup>47</sup>

**Work-place English language instruction:** Studies show that participation in adult education and training programs significantly improve participants’ employment prospects and increase their earnings.<sup>48</sup> However, low-skilled individuals—immigrants and natives alike—are less likely to have access to these programs for many reasons including costs, lack of information, language barriers, and competing family, work, and other demands.<sup>49</sup>

Our finding that immigrants had high employment rates even at low literacy levels suggests that many could be reached by *work-based* language and skill training programs. For one, bringing language instruction to the workplace helps contextualize English language learning so that immigrants can acquire meaningful occupation-specific language skills.<sup>50</sup> Equally important, work-based language instruction and skill training will reduce competing pressures such as the need to arrange for child care or to attend classes offered during the working hours. Work-based training for immigrants may also improve workers’ non-cognitive, “soft skills.”<sup>51</sup>

Getting employers’ commitments to subsidize programs for low skilled workers is a challenge because they are often viewed as readily replaceable. While Canada and a number of European countries experimented with offering training subsidies, technical assistance, tax, and other incentives to bolster employers’ interest in training low-skilled immigrant workers,<sup>52</sup> such programs are relatively rare in the United States.<sup>53</sup>

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<sup>46</sup> The adult ESL enrollment at the national level declined from 1.1 million to 677,000 during the 2007-08 to 2012-13 period or by 36 percent. See, U.S. Department of Education, Office of Career, Technical, and Adult Education, National Reporting System: “State Enrollment by Program Type (ABE, ESL, ASE): All States,” Program years 2007-12 (50 U.S. states and the District of Columbia),

<https://wdcrobcolp01.ed.gov/CFAPPS/OVAE/NRS/login.cfm>.

<sup>47</sup> ESL enrollment in California declined from 409,000 in 2007-08 to 186,000 in 2012-13, or by 55 percent. Similarly, enrollment in Adult Basic Education in California dropped by 30 percent from 123,000 to 85,000 during the same period. See U.S. Department of Education, Office of Career, Technical, and Adult Education, National Reporting System: “State Enrollment by Program Type (ABE, ESL, ASE): California,” Program years 2007-12, <https://wdcrobcolp01.ed.gov/CFAPPS/OVAE/NRS/login.cfm>.

<sup>48</sup> Phyllis Cummins, Suzanne Kunkel, and Ryan Walker, *Adult Education and Training Programs for Older Adults in the U.S.: National Results and Cross-National Comparisons Using PIAAC Data*. (Presented at “Taking the Next Step with PIAAC: A Research-to-Action” Conference, December 11-12, 2014, Arlington, VA).

<sup>49</sup> OECD, *The Survey of Adult Skills (PIAAC)*;

<sup>50</sup> Margie McHugh and A.E. Challinor, *Improving Immigrants’ Employment Prospects through Work-Focused Language Instruction* (Washington, DC: Migration Policy Institute, 2011), <http://www.migrationpolicy.org/pubs/workfocusedlanguageinstruction.pdf>

<sup>51</sup> Bonfati and Xenogiani, *Migrants’ Skills*.

<sup>52</sup> Meghan Benton et al., *Aiming Higher: Policies to Get Immigrants into Middle-Skilled Work in Europe* (Migration Policy Institute, 2014), <http://www.migrationpolicy.org/research/aiming-higher-policies-get-immigrants-middle-skilled-work-europe>.

<sup>53</sup> McHugh and Challinor, *Improving Immigrants’ Employment Prospects*; OECD, *Time for the U.S. to Reskill?*

**Addressing skill underutilization of college-educated immigrants:** In recent years many policymakers have called for stepped-up efforts to recruit immigrants who are highly skilled, investors, or entrepreneurs. However, as our earlier work demonstrates,<sup>54</sup> attracting these highly-sought people from abroad is often not enough to meet the immigrants’ or the larger economy’s needs as many end up not fully utilizing their skills and potential after arrival. We estimate that today more than 1.6 million of college-educated immigrants are either unemployed or employed in low-skilled jobs.<sup>55</sup> Put differently, one in five highly-skilled immigrants in the United States is affected by “brain waste.” The challenges these immigrants face include difficulties in foreign credential recognition, acquiring professional-level English skills, accessing professional networks, and building skills rewarded in the U.S. labor market.<sup>56</sup>

The relatively low English literacy and numeracy skills and poor labor market outcomes of adults with foreign-earned degrees underscore the need for federal, state and other initiatives that seek to deepen these highly educated immigrants’ language skills and facilitate the recognition of their foreign-earned credentials. The recognition of skills and credentials of highly educated immigrants has been a focus of state commissions seeking to promote immigrant integration.<sup>57</sup> They should logically be of concern to the President Obama’s recently announced White House Interagency Task Force on New Americans<sup>58</sup> as the issues raised cut across the responsibilities of the Departments of Education, Labor, and Commerce.

**Matching the type of language and literacy services with the needs of immigrants with varying levels of English proficiency:** In this report, we have examined the literacy and numeracy skills of immigrants with low, moderate, and high levels of spoken English proficiency.<sup>59</sup> The U.S. Census Bureau defines the first two groups as limited English proficient (LEP). Policymakers rely on the same definition to apportion funding for programs providing English instruction in both K-12 and adult education systems. However, immigrants with moderate levels of English language proficiency represent a distinct group whose English literacy and numeracy skills are much higher than those of the low-English proficient immigrant adults. This finding suggests that language and literacy service providers have to take into account the different needs of immigrants with low versus moderate English proficiency levels rather than treating them as one homogeneous group.

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<sup>54</sup> Batalova and Fix (with Peter Creticos), *Uneven Progress*.

<sup>55</sup> Authors’ analysis of the U.S. Census Bureau’s pooled 2011-2013 American Community Survey data.

<sup>56</sup> Jeanne Batalova, Margie McHugh, and Madeleine Morawski, *Brain Waste in the U.S. Workforce: Select Labor Force Characteristics of College-Educated Native-Born and Foreign-Born Adults*, (Washington, DC: Migration Policy Institute, 2014), <http://migrationpolicy.org/research/brain-waste-US-state-workforce-characteristics-college-educated-immigrants>.

<sup>57</sup> Maryland Governor’s Office of Community Initiatives, Executive Order 01.01.2008.18: The Maryland Council for New Americans, <http://www.governor.maryland.gov/executiveorders/01.01.2008.18eo.pdf>; Massachusetts Governor’s Office, Executive Order 503, “Integrating Immigrants and Refugees into the Commonwealth”, <http://www.mass.gov/eohhs/gov/departments/ori/ori-programs/new-americans-agenda.html>; State of Illinois’ Executive Department, Executive Order Creating New Americans Immigrant Policy Council (2005-10), <https://www.illinois.gov/Government/ExecOrders/Documents/2005/execorder2005-10.pdf>.

<sup>58</sup> The White House, *Presidential Memorandum: Creating Welcoming Communities and Fully Integrating Immigrants and Refugees* (Washington, DC: The White House, November 2014), <http://www.whitehouse.gov/the-press-office/2014/11/21/presidential-memorandum-creating-welcoming-communities-and-fully-integra>.

<sup>59</sup> Based on ACS respondents’ answers to a question “How well do you speak English,” we classified them into three groups: 1) respondents with low spoken English language proficiency: those who reported that they speak English “not well” or “not at all”; 2) respondents with moderate proficiency: those who reported that they speak English “well;” and 3) respondents with high proficiency: those who reported that they speak English “only” or “very well.”

**Providing language support at all levels of education:** There is a need to provide language instruction and workforce training to adults with low levels of education. But our finding that 54 percent of immigrants and 22 percent of natives with a bachelor’s degree scored below proficiency on English literacy points to the often overlooked fact that language and literacy services are needed at all levels of education.

## Glossary

Terms	Definitions
Baby Boomer	People born during the post–World War II boom between the years 1946 and 1964. In 2011, the first wave of the baby boomer generation turned 65 and became eligible for retirement.
Children of immigrants	The terms “children of immigrants,” “children from immigrant families,” and “immigrant-origin children” are used interchangeably and refer to both foreign- and U.S.-born children with at least one foreign-born parent.
Foreign born (or immigrant)	<p>The term refers to people who reported that they were born outside of the United States on the PIAAC questionnaire. The term “immigrants” is used interchangeably with “foreign born” and “first generation” in this report.</p> <p>To be consistent with OECD reports that employ PIAAC data, we used the above definition. Note that this definition is slightly different from the U.S. Census Bureau’s, which defines the foreign born as people who had no U.S. citizenship at birth. In other words, the Census Bureau’s definition excludes children who were born abroad to at least one U.S. citizen parent from the population of the “foreign born,” whereas the OECD definition – that we use here – would count them as “foreign born.”</p>
Generation: <i>First</i>  <i>1.5</i>  <i>Second</i>  <i>Third/plus</i>	<p>Persons who were born outside of the United States.</p> <p>A subset of the first generation, the 1.5 generation refers to the foreign-born persons who arrived in the United States before age 13.</p> <p>U.S.-born persons with at least one foreign-born parent.</p> <p>U.S.-born persons with no foreign-born parents.</p>
Limited English Proficient (LEP)	Those who self-reported speaking English “not at all,” “not well,” or “well” on their survey questionnaire. Persons who speak only English or who report speaking English “very well” are considered proficient in English.
Skills assessed on PIAAC: <i>English literacy</i>  <i>Numeracy</i>  <i>Problem solving</i>	<p>As defined by PIAAC’s frameworks<sup>60</sup>,</p> <p>Literacy is “understanding, evaluating, using and engaging with written text to participate in the society, to achieve one’s goals and to develop one’s knowledge and potential.” In the context of the U.S. data, literacy refers to English literacy.”</p> <p>Numeracy refers to adults’ ability “to access, use, interpret, and communicate mathematical information and ideas, to engage in and manage mathematical demands of a range of situations in adult life.”</p> <p>Problem-solving in technology-rich environment refers to adults’ ability to use “digital technology, communication tools, and networks to acquire and evaluate information, communicate with others, and perform practical tasks.”</p>
Native (or U.S. born)	We used the definition of “natives” used in OECD reports using PIAAC data. The term “native” refers to people who stated that they were born in the United States.

<sup>60</sup> National Center for Education Statistics, *PIAAC Frameworks*, <http://nces.ed.gov/surveys/piaac/framework.asp>.

## Appendix A. PIAAC versus ACS

	PIAAC 2012		ACS 2012	
	U.S. Born	Foreign Born	U.S. Born	Foreign Born
<b>Estimate of non-institutionalized population, 16-65 (weighted)</b>	165,791,000	28,636,000	169,674,000	36,737,000
<b>Sample size</b>	4,259	636	1,671,363	308,777
<b>Born in the United States (%)</b>				
Yes	85.3		82.2	
No		14.7		17.8
<b>Gender</b>				
% female	51.1	51.5	50.8	50.8
<b>Age</b>				
Mean	39.9	40.6	39.9	40.7
<i>By category (%)</i>				
16-26	24.6	14.3	24.8	15.6
27-34	14.9	20.3	15.2	18.7
35-44	18.8	26.5	18.1	26.3
45-54	21.6	23.8	20.9	22.3
55-65	20.0	15.2	20.9	17.1
<b>Race and Hispanic origin (%)</b>				
Non-Hispanic white	73.7	17.7	73.1	18.1
Non-Hispanic black	13.1	10.1	13.9	8.1
Non-Hispanic Asian	1.9	23.8	2.0	25.1
Hispanic	8.6	47.0	9.5	47.9
Other race (non-Hispanic)	2.8	1.3	1.5	0.7
<b>Years of U.S. residence (%)</b>				
2007-2011		9.7		13.6
2000-2006		18.9		22.4
1990-1999		28.9		28.6
Before 1990		42.5		35.4
U.S. born	100.0		100.0	
<b>Age at immigration (%)</b>				
Aged 0-5		13.9		12.1
Aged 6-10		5.2		7.8
Aged 11-15		9.1		9.9
Aged 16-20		22.4		18.3
Aged 21-25		22.2		17.9
Aged 26-30		11.7		13.5
Aged 31-35		6.6		8.4
Aged 36-40		5.3		5.2
Aged 41 or older		3.7		6.8
<b>Living with spouse or partner (%)</b>				
Yes	65.8	73.7	51.1	57.8
No	34.2	26.3	48.9	42.2

	PIAAC 2012		ACS 2012	
	U.S. Born	Foreign Born	U.S. Born	Foreign Born
<b>Highest level of formal education obtained (%)</b>				
Less than high school	12.6	27.0	12.7	28.3
High school or GED	51.8	37.4	52.5	38.7
Associate's degree	9.6	5.2	8.3	6.0
Bachelor's degree	16.5	14.8	17.6	16.3
Master's degree and above	9.5	15.6	8.9	10.7
<b>Self-assessed spoken English proficiency (%)</b>				
Speak English only or very well	92.0	40.9	98.9	52.8
Speak English well	7.5	31.9	0.8	21.0
Speak English not well/not at all	0.5	27.3	0.3	26.2
<b>Employment status (%)</b>				
Employed	72.9	76.0	66.8	68.6
Unemployed	8.3	5.9	7.1	6.5
Not in the labor force	18.8	18.0	26.1	24.9

*Notes:* There were 115 missing cases.

*Source:* Migration Policy Institute analysis of the 2012 PIAAC and 2012 ACS data.

## Appendix B. PIAAC versus CPS

	PIAAC 2012			CPS 2012		
	1st gen	2nd gen	3rd gen/plus	1st gen	2nd gen	3rd gen/plus
<b>Estimate of non-institutionalized population, 16-65 (weighted)</b>	27,241,000	17,692,000	149,223,000	36,383,000	17,177,000	151,676,000
<b>Sample size</b>	604	409	3,879	24,041	10,883	95,653
<b>Immigrant generation*</b>						
1st generation	14.1			17.7		
2nd generation		9.2			8.4	
3rd/plus generation			76.7			73.9
<b>Gender</b>						
% female	51.4	48.1	51.5	50.0	49.8	51.1
<b>Age</b>						
Mean	40.6	32.8	40.7	40.7	33.2	40.6
<i>By category (%)</i>						
16-26	13.9	43.6	22.2	15.5	42.1	22.8
27-34	20.4	17.7	14.6	18.8	18.6	15.0
35-44	26.1	16.8	19.3	25.8	15.6	18.4
45-54	24.7	13.5	22.5	23.1	12.5	22.0
55-65	14.9	8.3	21.4	16.8	11.2	21.9
<b>Race and Hispanic origin (%)</b>						
Non-Hispanic white	15.2	39.6	77.7	19.1	32.5	77.8
Non-Hispanic black	10.1	5.4	14.0	7.8	5.7	14.6
Non-Hispanic Asian	24.4	12.1	0.8	24.1	14.0	0.8
Hispanic	49.0	41.3	4.6	48.9	47.3	5.2
Other race (non-Hispanic)	1.3	1.6	2.9	0.2	0.5	1.7
<b>Highest level of formal education</b>						
Less than high school	27.5	18.1	11.7	27.3	18.9	12.4
High school or GED	37.3	47.2	52.3	38.3	46.7	49.6
Associate's degree	5.2	9.9	9.5	6.5	7.6	10.1
Bachelor's degree	14.4	11.7	17.3	17.7	17.8	18.9
Master's degree and above	15.6	13.1	9.2	10.2	9.0	9.0
<b>Employment status (%)</b>						
Employed	76.2	67.7	73.7	67.1	61.0	66.5
Unemployed	5.4	13.0	7.7	6.4	7.1	6.2
Out of the labour force	18.2	19.3	18.5	26.6	31.9	27.3

*Notes:* \*There were 32 respondents who reported that they were born in another country but there were classified by OECD as third generation (because they had U.S.-born parents). There were 118 missing cases.

*Source:* Migration Policy Institute analysis of the 2012 PIAAC and 2012 CPS data.

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Michael Fix is President of the Migration Policy Institute, a position he assumed in July 2014 after serving as CEO and Director of Studies. He joined MPI in 2005, and was previously Senior Vice President and Co-Director of MPI's National Center on Immigrant Integration Policy.

Mr. Fix's research focus is on immigrant integration and the education of immigrant children in the United States and Europe, as well as citizenship policy, immigrant children and families, the effect of welfare reform on immigrants, and the impact of immigrants on the U.S. labor force.

Mr. Fix serves on the board of MPI Europe and is a Policy Fellow with IZA in Bonn, Germany. In December 2013, he was nominated to be a member of the National Research Council's Committee on the Integration of Immigrants into U.S. Society, which over its two-year life will examine what is known about the integration of immigrants in the United States and identify any major gaps in existing knowledge on this topic.

Previously, he served on the National Academy of Sciences' Committee on the Redesign of U.S. Naturalization Tests and on the Committee on the Health and Adjustment of Immigrant Children. He also served as a member of the Advisory Panel to the Foundation for Child Development's Young Scholars Program. In 2005 he was appointed to the State of Illinois' New Americans Advisory Council, and in 2009 to the State of Maryland's Council for New Americans.

Mr. Fix received a JD from the University of Virginia and a bachelor of the arts degree from Princeton University. He did additional graduate work at the London School of Economics.

### **Jeanne Batalova**

Jeanne Batalova is a Senior Policy Analyst at the Migration Policy Institute. She conducted extensive research about immigrant adults' literacy and skills, the college enrollment and completion among immigrant-origin youth, educational outcomes for English language learners, the underemployment of college-educated immigrants, and estimates of unauthorized youth eligible for immigration benefits under the Deferred Action for Childhood Arrivals (DACA) program. She also manages the MPI Data Hub -- a one-stop, web-based resource that provides instant access to the latest facts, statistics, and maps covering U.S. and global data on immigration and immigrant integration.

She earned her PhD in sociology, with a specialization in demography, from the University of California-Irvine; an MBA from Roosevelt University; and bachelor of the arts in economics from the Academy of Economic Studies, Chisinau, Moldova.