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## The Academic Achievement of Limited English Proficient (LEP) Youth in New and Established Immigrant States: Lessons from the National Assessment of Educational Progress (NAEP)

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**Abstract:** The dramatic growth and dispersal of immigrant families has changed the face of public education at a time when states are experiencing increased school accountability pressures under the No Child Left Behind Act and its recent successor, the Every Student Succeeds Act. Of particular concern is how these demographic shifts affect the academic well-being of Limited English Proficient (LEP) youth, the protected sub-group that most directly targets children from immigrant

families. Using individual-level data from the National Association of Educational Progress (NAEP), we examine how eighth grade test scores of LEP youth differ across new and established immigrant destination states. Results show that achievement for LEP youth is higher in new than in established immigrant states, but that this advantage is not consistent across ethnic/racial groups. LEP youth in new immigrant states benefit from more favorable demographic characteristics and family and school resources, but these differences only explain a small portion of the achievement gap.

**Keywords:** Children of immigrants; limited English proficient; new immigrant destination; academic achievement

### **El rendimiento académico de jóvenes de Competencia Limitada de Inglés (LEP) en Nuevos y Establecidos Estados de Inmigrantes: Lecciones de la Evaluación Nacional del Progreso Educativo (NAEP)**

**Resumen:** El crecimiento y disperso dramático de familias inmigrantes han cambiado la educación pública en un tiempo cuando los estados están experimentando un aumento de presiones sobre la responsabilidad de la escuela bajo de la ley No Child Left Behind y su sucesor, la ley Every Student Succeeds. De importancia en particular es como estos cambios demográficos afectan el bienestar académico de jóvenes de Competencia Limitada de Inglés (LEP), el sub-grupo protegido que enfoca en los niños de familias inmigrantes. Por el uso de data del nivel individuo de la Evaluación Nacional del Progreso Educativo (NAEP), los autores examinan como los resultados de exámenes de jóvenes de LEP en el octavo grado y estos resultados varían entre las destinaciones nuevas y establecidos para inmigrantes. Los resultados muestran que rendimiento para jóvenes de LEP es más alto en estados nuevos para inmigrantes que los establecidos, pero que esta ventaja no está consistente en todos los grupos étnicos y raciales. Jóvenes de LEP en estados nuevos de inmigrantes benefician de características demográficas más favorables y recursos de la familia y escuela, pero estas diferencias solo explican un porcentaje pequeño de la brecha en rendimiento.

**Palabras-clave:** Hijos de inmigrantes; competencia limitada de inglés; destinación nueva de inmigrantes; rendimiento académico

### **O desempenho acadêmico dos jovens Proficiência Limitada em Inglês (LEP) de imigrantes novos e estabelecidos Unidos: Lições da Avaliação Nacional do Progresso Educacional (NAEP)**

**Resumo:** O crescimento e expansão dramática de famílias de imigrantes mudaram a educação pública num momento em que os estados estão enfrentando um aumento das pressões sobre a responsabilidade escolar da lei No Child Left Behind e seu sucessor, a lei Every Student Succeeds. De importância em particular é como essas mudanças demográficas afetam o bem-estar acadêmico dos jovens de Proficiência Limitada em Inglês (LEP), o subgrupo protegido que se centre nas crianças de famílias de imigrantes. Usando dados do nível individual da Avaliação Nacional do Progresso Educacional (NAEP), os autores examinam os resultados dos testes de jovens de LEP na oitava série, e estes resultados variam entre os destinos novos e estabelecidos de imigrantes. Os resultados mostram que o desempenho para os jovens de LEP é maior nos novos estados que nos imigrantes estabelecidos, mas esta vantagem não é consistente em todos os grupos étnicos e raciais. Jovens imigrantes com LEP em novos estados beneficiam de características demográficas mais favoráveis e os recursos da família e da escola, mas essas diferenças explicam apenas uma pequena percentagem da diferença no desempenho.

**Palavras-chave:** Filhos de imigrantes; competência limitada de inglês; destinação nova de imigrantes; desempenho acadêmico

## Introduction

The dramatic growth and dispersal of immigrant families has changed the face of public education at a time when states are experiencing increased school accountability pressures under the No Child Left Behind Act of 2001 (NCLB) and its recent successor, the Every Student Succeeds Act (ESSA) of 2015. Of particular concern is how these demographic shifts affect the academic well-being of Limited English Proficient (LEP) youth, the protected sub-group under both NCLB and ESSA that most directly targets children from immigrant families. As the fastest-growing segment of the student population, Limited English Proficient (LEP) youth are expected to make up 25% of all public school children by 2025 (Spellings, 2005). While almost 70% of LEP youth reside in five states—California, Florida, Illinois, New York, and Texas—the size of the LEP population has grown more rapidly between 1990 and 2000 in new destination states in the Southeast and Midwest, exceeding 100% growth in 18 states (Capps et al. 2005; Cosentino de Cohen & Clewell, 2007).

No matter their state of residence, LEP youth lag behind their non-LEP peers across a variety of academic outcomes. National trends indicate a linguistic achievement gap with 71% of LEP youth scoring lower on standardized math and reading tests than their English proficient non-Latino white peers (Fry, 2007). Additionally, compared to non-LEP youth, LEP youth are less likely to enroll in rigorous academic courses (Callahan, 2005), complete high school (Morse, 2005), and attend college (Flores, Batalova, & Fix, 2012).

This linguistic gap in academic performance is partly attributable to the lack of LEP educational support systems in U.S. schools—a problem of particular concern for new immigrant destinations. Even without the challenge of adapting to a new and rapidly growing population, schools in established immigrant states often struggle to develop appropriate programs that successfully integrate language and content learning (Cosentino de Cohen, Deterding, & Clewell, 2005; Ruiz de Velasco & Fix, 2000). These struggles are likely exacerbated in new destination states, which have more limited immigrant-specific resources (Massey, 2008). Shortages of ESL teachers, bilingual staff, ESL courses, and translation services in these states create language barriers and cultural divisions that alienate LEP families and hinder student aspirations and achievement (Dondero & Muller, 2012; Wainer, 2006).

This study adds to the literature on new immigrant destinations by being the first to focus on the academic achievement of the sub-group of children of immigrants with the greatest linguistic need, LEP youth. These LEP youth make up over 20% of the child of immigrant population (Fry, 2008) and in particular, suffer from the lack of linguistic support systems in new destination states. Though not all LEP youth are children of immigrants, over 70% are (Murray, Batalova, & Fix, 2007) and evidence indicates that US schools still largely treat LEP students as immigrant students (Rodriguez & Cruz, 2009). Thus, our study is the first to demonstrate how the sub-group of immigrant youth most readily identified by U.S. schools is faring in new destination states compared to their peers in established states.

We focus on academic achievement during middle school (eighth grade) from 2003 to 2007 for several reasons. First, states have a vested interest in assessing the educational needs of their LEP population during these years, since eighth grade is a testing year for NCLB and its successor, ESSA. Second, prior studies indicate that the rapid growth and dispersal of LEP youth has had a larger impact on secondary schools than elementary schools and that secondary schools are the least

equipped financially and programmatically to promote the language acquisition of LEP youth (Capps et al., 2005; Ruiz de Velasco & Fix, 2000). Third, evidence indicates that by eighth grade students long-term academic trajectory is largely solidified. One-third of all dropouts occur once students enter ninth grade (Editorial Projects in Education, 2007), and even for those who stay in school, academic achievement in eighth grade, and not high school, largely determines their trajectory into college (Moller et al., 2011). Thus, eighth grade serves as a crucial year for assessing LEP students' potential for long-term success.

We use the restricted, individual-level data from the National Assessment of Educational Progress (NAEP) study to address three research questions: 1) How does the academic achievement of middle school aged LEP (and non-LEP) youth differ between new and established immigrant destination states?; 2) How do differences in demographic, family, and school resources contribute to the variation in achievement between new and established immigrant states?; and 3) Are there differences across racial/ethnic LEP groups? Referred to as the "Nation's Report Card," the NAEP is the largest nationally representative and continuous assessment of academic performance of the nation's youth. Using the individual-level NAEP data allows us to perform cross-state comparisons (Sherman, 2006). Unlike other national survey data, the state NAEP samples are comparable across states—in this case new and established destination states—and sufficiently large to examine variation in LEP students' academic achievement across ethnic/racial groups.

## Overview of LEP Students

Comprising approximately 10% of the total K-12 student population, the LEP population is linguistically, racially/ethnically, and generationally diverse. Often referred to as English language learners (ELLs), LEP youth, as defined by NCLB and ESSA, are youth who speak a language other than English at home and do not have sufficient mastery of English to excel in the classroom. Among the LEP youth, over 450 different native languages are spoken, with Spanish (71.6%) being the most common (Murray, Batalova, & Fix, 2007). Latino (75%) and Asian children (13%) make up the vast majority of LEP youth (Morse, 2005). In terms of generational status, a plurality of LEP youth are foreign-born, but most, even at the secondary level, are US-born (Capps et al., 2005; Murray, Batalova, & Fix, 2007). Among sixth to 12<sup>th</sup> graders in 2000, for instance, 44% of LEP youth were foreign-born first-generation (i.e., child and parents are foreign-born), whereas 27% were U.S.-born second-generation (i.e., child born in the US to foreign-born parents), and 29% were US-born third-generation (i.e., child and parents are U.S.-born; Murray, Batalova, & Fix, 2007). Third- and second-generation students, as well as first-generation students who have been in the US for most of their lives, are referred to as long-term ELLs and are often orally proficient in English but lack academic English language proficiency (Callahan, 2005; Collier, 1987; Rodriguez & Cruz, 2009).

While the LEP population is diverse, research suggests that LEP youth face additional educational barriers beyond just English language challenges. In 2013, about 25% of the LEP population lived in low-income households (i.e., households with an annual income below the federal poverty line), and 46% of LEP adults had less than a high school degree (Zong & Batalova, 2015). Additionally most LEP youth attend resource poor schools with large student populations that are racially and economically segregated (Capps et al., 2005; Cohen de Cosentino & Clewell, 2007). Adding to these challenges, differences in prior educational experiences and years in the US can also serve as educational barriers for foreign-born LEP youth (Ruiz de Velasco & Fix, 2000).

## **Social Context of Reception and Immigrant Families in New and Established Destinations**

Studies on the LEP achievement gap have largely focused on LEP youth residing in established immigrant states and have yet to examine new immigrant destination states (Rodriguez & Cruz, 2009). Though immigration to new destinations has been classified across regions, metropolitan areas, cities, and states (Baird et al., 2008; Crowley, Lichter, & Qian 2006; Massey & Capoferro, 2008), we focus on immigration at the state level for several reasons. Most importantly, NCLB and ESSA hold states accountable for the achievement of LEP youth, and policymakers are concerned that high growth in new immigrant states may potentially strain their educational systems (Capps et al., 2005; Fortuny et al., 2009; Murray, Batalova, & Fix, 2007). Moreover, as the primary funding source for K-12 education, states create the foundational structures of the educational system that determine LEP youth's access to educational resources (Capps et al., 2005; Wiley & Wright, 2004). Thus, our assessment provides an indication of how different states are faring in an era of increased school accountability pressure in both new and established immigrant states.

Traditionally, LEP youth and children of immigrants have settled in the "big five" immigrant-receiving states—California, Florida, Illinois, New York, and Texas—which are home to over 70% of both LEP children and children of immigrants (Cosentino de Cohen & Clewell, 2007; Massey & Capoferro, 2008). Beginning in the mid-1990s, however, immigrant families, including those with LEP children, began to settle in new destination states across the US. Similar to prior research (Clotfelter, Ladd, & Vigdor, 2012), we use a modified version of Massey and Capoferro's state classification to identify these new destination states. In Table 1 we categorize each state as an established, new, or other immigrant destination state. Established immigrant states are the "big five" states noted. New destination states include those with high immigrant and LEP growth since the 1990s. Between 1990 and 2000, the recent immigrant population in these states grew by an average of 63% (Massey & Capoferro, 2008) and the LEP youth population grew by 95% (Capps et al., 2005), both of which were above the national average of 8.5% and 64%, respectively. All remaining states are classified as other immigrant destination states. We provide more details about this classification in the measurement section.

Whether LEP youth are able to adapt successfully in new immigrant destination states will be influenced by the structural resources states and schools devote to their unique educational needs, as well as the economic and social resources of immigrant families (Portes & Rumbaut, 2001). On the positive side, in terms of structural resources, research indicates that economic opportunities for immigrant families may be greater in new immigrant destinations, which could be positively associated with student achievement. Compared to established destinations, new immigrant destinations tend to have greater economic growth and stronger labor markets (Massey, 2008). The greater availability of economic opportunities for immigrant families in new destinations has been tied to lower poverty rates at the regional level (Crowley et al., 2006), and extant research indicates that familial economic well-being is a strong predictor of student achievement (Kao & Thompson, 2003).

The lack of LEP and immigrant support services in new destination states, however, may counteract some of the economic benefits of living in these states. Research suggests that LEP youth in new destinations must adapt to communities where there is not a strong co-ethnic presence and where many public institutions lack resources to provide linguistically and culturally appropriate services (Massey, 2008; Wainer, 2006). In contrast, because established destinations have had a long history of building relationships with and providing services to immigrants, educators in these areas

often have the resources and knowledge base to address LEP and immigrant student needs (Dondero & Muller, 2012).

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Table 1

*List of State Classifications for Established, New, and Other Immigrant Destination  
State Categories based on Massey and Capoferro's (2008) Classification*

Established States (5 states)

California

Florida

Illinois

New York

Texas

New States (25 states and DC)

Arizona

Colorado

Connecticut

District of Columbia

Georgia

Hawaii

Indiana

Kansas

Louisiana

Maryland

Massachusetts

Michigan

Minnesota

Missouri

Nevada

New Jersey

North Carolina

Ohio

Oregon

Pennsylvania

Rhode Island

Tennessee

Utah

Virginia

Washington

Wisconsin

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Other States (20 states)

Alaska

Alabama

Arkansas

Delaware

Idaho

Iowa

Kentucky

Maine

Mississippi

Montana

Nebraska

New Hampshire

New Mexico

North Dakota

Oklahoma

South Carolina

South Dakota

Vermont

West Virginia

Wyoming

In terms of immigrant families' characteristics and resources, research indicates that immigrants settling in new destination states are racially/ethnically and economically diverse, both of which have implications for student achievement. First, the growth of immigrants in new destination states has occurred among all ethnic/racial groups while, in contrast, between 1990 and 2005 the percent of immigrants living in the five traditional immigrant states—California, New York, Texas, Florida, and Illinois—declined by 86% to 60% for Mexicans, 72% to 50% for other Latin Americans, 60% to 49% for Asians, and 56% to 45% for all other immigrants (e.g., whites and blacks; Massey & Capoferro, 2008). The diverse racial/ethnic streams of immigrants settling in new destinations will likely shape LEP student achievement in these destinations. Achievement patterns are known to differ across racial/ethnic groups (Kao & Thompson, 2003), and research on LEP youth in Texas suggests that student performance in high school may be related more to racial/ethnic status than LEP status (Flores, Batalova, & Fix, 2012). As a result, achievement differences of LEP youth in new and established destinations may reflect differences in the racial/ethnic composition of their student populations. Moreover, achievement differences between LEP youth in new and established destinations may differ for different ethnic/racial groups.

Second, immigrants in new destination states come from a wide mix of educational and economic backgrounds. Some immigrant groups in new destination states—particularly Asian, South American, and second-destination migrants—have relatively high incomes, education levels, and employment rates (Hall, 2009; Massey, 2008; Stamps & Bohon, 2006), while others—particularly Mexican and rural migrants—tend to be younger, less educated, and more likely to be undocumented (Crowley, Lichter, & Qian, 2006; Massey, 2008). This variation in human capital is likely to have strong implications for LEP youth.

One potential resource all families can utilize to help youth be successful is bilingualism. Research finds that there is a strong academic benefit to speaking a language other than English in the household (Portes & Rumbaut, 2001). Bilingual students who are fluent in English have the English language skills necessary to succeed in US schools but also benefit from a strong sense of ethnic identity (Rumberger & Larson, 1998), a factor known to be positively associated with student achievement (Fuligni, Witkow, & Garcia, 2005).

## **School Context**

Research on schools in new immigrant destinations indicates that they enjoy greater overall resources and more favorable compositional characteristics but lack the immigrant-specific resources to ensure the complete success of LEP youth. On the positive side, schools in new destinations have significantly lower percentages of students who qualify for free and reduced-price lunch (FRL) and minority students (Dondero & Muller, 2012; Fry, 2011)—factors that are strongly associated with achievement (Hanushek & Rivkin, 2009). Additionally, these schools often have greater resources as evidenced by their smaller size, smaller teacher-student ratio, more suburban rather than urban location, and greater high school graduation rates (Dondero & Muller, 2012; Fry, 2011). However, they also struggle to train teachers in bilingual and ESL education and to offer linguistic supports for LEP students and their parents (Dondero & Muller, 2012; Wainer, 2006). Moreover, in addition to settling in suburban areas of new destination states, immigrant families have also settled in rural areas, particularly in the South, which often have limited school resources (Massey, 2008).

The presence of immigrant-specific resources in established destination schools is in part a benefit of economies of scale associated with increasing concentrations of LEP youth (Murray, Batalova, & Fix, 2007). Though the concentration of economically disadvantaged students and lower school quality associated with racially and linguistically segregated schools often hinder achievement



(Hanushek & Rivkin, 2009), more integrated schools may also be less responsive to LEP youth's specific needs. Compared to less concentrated LEP schools, highly concentrated LEP schools offer more English language programs, have more teachers certified in ESL/bilingual education, and engage in more immigrant parental outreach (Cosentino de Cohen, Deterding, & Clewell, 2005). Highly concentrated LEP schools place higher priority on LEP students' needs and are able to develop more cost-effective specialized services that balance both the linguistic and academic needs of LEP youth (Callahan, Wilkinson, & Muller, 2008; Potochnick & Handa, 2013).

### **Prior Research on New and Established Destinations**

Though studies have yet to examine achievement patterns of LEP youth in new and established immigrant destinations, several have examined these patterns for children of immigrants and Latinos—some of which are LEP. These studies find both advantages and disadvantages associated with living in a new immigrant destination. In terms of advantages, research indicates that immigrant and Latino youth in new immigrant destinations have higher academic motivations (Perreira, Fuligni, & Potochnick, 2010), higher levels of academic attainment (Stamps & Bohon, 2006), and higher test scores in high school (Potochnick, 2014). Other studies, however, find that immigrant and Latino youth living in new immigrant destinations, compared to established destinations, are more likely to drop out of high school (Fischer, 2010) and to experience greater educational stratification, as measured by the Latino-white gap in advanced course enrollment (Dondero & Muller, 2012). Our study adds to this emerging research on new immigrant destinations and academic well-being by focusing on LEP students, an important sub-group of children of immigrants that has yet to be examined by the literature.

## **Study Design**

### **Data and Sample**

This analysis uses the individual-level (restricted-version) data from the state NAEP samples, which are representative of the public school population for each state. NAEP collects questionnaire data from students, teachers, and school administrators on a variety of factors, including family background, teacher qualifications, and school resources/characteristics. Beginning in 2003, all schools that receive Title I funding have been required to participate in NAEP reading and math assessments every two years for fourth and eighth graders. We use the eighth grade math and reading data for 2003, 2005, and 2007. By pooling multiple years we are able to more comprehensively assess achievement patterns in new and established destination immigrant states.

We begin in 2003 since state participation in NAEP at this point was no longer optional and end before 2008 to avoid potential confounding effects of the recession. After the recession, funds for educational programs in many states were cut and other resources constrained (Leachman & Mai, 2014). At the same time, anti-immigrant sentiment increased and more restrictive immigration policies were put in place (Massey, 2012; Papademetriou et al., 2010; Singer & Wilson, 2010). Additionally, though there was not large-scale exit of immigrants during the recession, the number of new arrivals, particularly unauthorized immigrants, and migration of immigrants within the US decreased substantially (Ellis, Wright, & Townley, 2014; Passel & Cohn, 2009). Recovery from the Great Recession has been prolonged and weak, with many families struggling to regain economic stability, a trend that may still be shaping student achievement. Thus, inclusion of the recession years would potentially confound our analysis making it difficult to distinguish between the effects of the recession and the true differences between new and established immigrant destination states. This

paper provides a fundamental basis for understanding the academic achievement of LEP youth in new destination states pre-recession and will allow for future research to contrast these patterns of achievement in the years after the recession.

The state NAEP data have numerous strengths but also limitations (NAEP, 2007). The biggest strength is that the state NAEP data provide the most comparable assessment of LEP youth's achievement across all 50 states. Unlike state assessments collected under NCLB and now ESSA, which allow each state to design its own assessment system, the state NAEP assessments are based on the same test administered in every state, which ensures comparability across states. Additionally, to overcome the variability in state LEP definitions and inclusion rates found with the NCLB/ESSA state assessments, NAEP provides standardized procedures for including LEP students in testing and requires states to meet participation rate standards. The challenge with NAEP data and all data collected on LEP youth is that schools ultimately determine students' LEP classification, which creates a potential for systematic bias, an issue we address in a sensitivity assessment.

In our sample, we included all white, black, Asian, and Latino students. No students had missing values on the math test scores, but we eliminated ten students who had missing values on the reading test. We correct for missing data on independent variables using mean substitution and dummy variable correction. We did not use multiple imputation to correct for missing data because the NAEP test scores are already based on five plausible imputed values and thus require different analyses, as described in our measurement section. Our final sample is 402,240 in math and 406,600 in reading. Results are rounded to the nearest 10 as required by the National Center for Education Statistics (NCES).

## Measures

**Academic Achievement.** We use reading and math test scores for two reasons. First, because NCLB and ESSA require states to test qualified LEP students in these subjects during their eighth grade year, the NAEP math and reading scores provide a strong indication of how well students in new and established destination states are performing. Second, because math and reading ability have been shown to affect future labor market outcomes (Farkas, 2003), performance on these measures provides early evidence on the long-term assimilation trajectories of LEP youth.

Because NAEP does not have one test score for each student but instead assigns five "plausible" values for test performance, researchers must combine the results using Rubin's (1987) rule for combining point and variance estimates from multiple imputed data. An alternative option suggested by NAEP is to estimate results based on one set of plausible values (NAEP, 2007). The point estimate will have the same value but lower precision. Our final model uses both methods and provides similar results. Thus, for simplicity we present results using the single plausible value option.

The math and reading test scores are based on Item Response Theory (IRT) which models the probability that a student would answer all questions on the test correctly. Both the reading and math IRT scales range from 0 to 500. The means and standard deviations in student test scores in our sample were 262.11 and 33.99, respectively, for reading, and 278.65 and 35.45, respectively, for math. Thus, a score change of 11 to 12 points would equate to roughly one-third of a standard deviation or about a 3 to 4% increase in achievement at the mean.

**State Immigrant Destination Type.** As noted, we use a modified version of Massey and Capoferro's (2008) state classification to categorize states into three mutually exclusive categories, as detailed in Table 1. While Massey and Capoferro identified four categories of immigrant destination

states (the “big five,” second-tier, new, and other), we simplify this to three: established, new, and other immigrant destination states. We classify Massey and Capoferro’s five second-tier states—New Jersey, Massachusetts, Washington, Virginia, and Maryland— as new destination states based on the grounds that these states are more similar to new than established destination states. Massey and Capoferro had identified these second-tier states as not being established immigrant destinations like the “big five” states but having a slightly larger immigrant population in 1980 than the new destination states they identified. These second-tier states, however, also experienced significant growth in their LEP youth populations, at an average of 76.2%, which exceeds the national state average of 64% (Capps et al., 2005). Additionally, in an analysis not shown we found that LEP achievement in these second-tier states did not differ from LEP achievement in new destination states. Thus, we simplify the analysis and categorize second-tier states as new destination states.

**Student Background.** We follow the NAEP definition and classify students as LEP based on school reports. Because English language skills differ among LEP youth, testing accommodations are made available for the most limited English proficient youth. We account for these testing accommodations by creating a binary indicator equal to one if the student received testing accommodations. Lastly, to control for potential demographic differences between state immigrant destination type, we include controls for sex (1=female, 0=male), age and race/ethnicity (black, white, Latino, or Asian) obtained through school records. Unfortunately, NAEP does not have information on students’ place of birth, so we cannot identify a student’s immigrant generation status.

**Family Characteristics:** To assess variation in familial economic, educational, and linguistic resources across immigrant destinations, we include indicators for parents’ highest level of education, students’ eligibility for FRL (1=yes, 0=no), and whether a language other than English is spoken at home (1=yes, 0=no).

**School Context:** To assess the influence of school context, we control for the compositional characteristics of schools, overall resources in schools, and immigrant-specific resources in schools. To assess compositional characteristics, we include the proportions of white, black, Latino, Asian, and Native American students in the school and dummy categories for the percent of students receiving FRL at school (25% or less, 26% to 50%, and greater than 50%). Proportions of white students and schools with fewer than 25% FRL students are the reference categories. For overall school resources, we include indicators at the school and classroom level. We indicate whether a school received Title I funds (1=yes, 0=no), since these funds target the most disadvantaged schools and control for differences in urbanicity—city, rural, and suburban—given that school resources and the characteristics of migrants settling in these areas vary (Massey, 2008). For classroom resources, we include teacher’s years of experience and whether students’ teachers received non-standard teaching certifications (1=yes, 0=no).

While NAEP has rich contextual information about schools overall, there is limited information on immigrant-specific resources. The only indicator available is the percent of students enrolled in an ESL course—a proxy indicator of whether schools address immigrant youths’ English language needs by developing specialized English language supports (Cosentino de Cohen, Deterding, & Clewell 2005). We classify the percent enrolled in ESL into categories: less than 1%, 1% to 5%, and greater than 5%.

## Analytical Approach

To assess LEP youth's educational experiences in new and established states, we first evaluated proportion and mean differences in academic achievement as well as key socio-demographic, family, and school characteristics by state immigrant destination type, i.e., new, established, and other. Because our sample size was relatively large, all mean and proportion differences were statistically significant at the .05 level. Thus, it was more informative to assess whether the size of the differences were substantively meaningful. Though the focus of the paper was to compare new and established immigrant states, for reference purposes we provided information on other immigrant states in the tables.

We then estimated OLS regression models that adjusted for clustering at the school-level. Because students are nested within schools, the OLS assumption of independence is violated and leads to artificially depressed standard errors and increases the likelihood of committing a Type I error, i.e., an incorrect rejection of a true null hypothesis. To correct for the clustering of students within schools we used Huber-White corrected standard errors that adjusted for school clustering and produced unbiased standard errors (Maas & Hox, 2004; Rogers, 1993). For our analysis we used the following general model:

$$Y_{ijt} = \alpha_{0jt} + \beta_1 L_{ijt} + \beta_2 I_{ijt} + \beta_3 L * I_{ijt} + \beta_4 X_{ijt} + \beta_5 S_{jt} + \beta_6 Y_t + \varepsilon_{ij}$$

where  $i$  indexed individuals,  $j$  indexed schools, and  $t$  indexed year.  $Y_{ijt}$  was the outcome variable of interest (reading or math test score);  $L_{ijt}$  was a dummy indicator of LEP status (non-LEP status is the reference category);  $I_{ijt}$  was a vector of three dummies indicating state immigrant destination type (established destination is the reference category) based on where a student lived;  $X_{ijt}$  was a vector of individual characteristics (gender, age, race/ethnicity, parent education, FRL eligible, testing accommodations, and other language spoken at home);  $S_{jt}$  was a vector of school characteristics, including compositional characteristics (racial/ethnic percentages and percent on FRL), overall resources (receives Title 1 funding, urbanicity, teacher certification, and teacher years of experience), and proxy for immigrant-specific resources (percent receives ESL);  $Y_t$  was a vector of year dummies; and  $\varepsilon_{ij}$  was the error term. All models corrected for the multistage cluster sampling design effects of NAEP with sample weights, robust standard errors, and a correction for the clustering of students in schools.

In this model,  $\beta_3$  represented the vector of coefficients of interest. These were the two-way interaction between two sets of dummy variables: LEP status (LEP and non-LEP) and state immigrant destination type (established, new, and other). These interactions allowed us to compare how the achievement of LEP (and non-LEP) youth differed between new and established immigrant destinations. We also assessed how state immigrant destination type was associated with achievement for each racial/ethnic sub-group by adding three-way interactions (LEP\*state immigrant destination type\*racial/ethnic group) to the models. To ease interpretation, we calculated the marginal coefficients for the two-way and three-way interactions (Brambor, Clark, & Golder, 2005) using the following general equation:

$$\begin{aligned} Y &= \beta_0 + \beta_1 X + \beta_2 Z + \beta_3 XZ \\ \text{Total Marginal Coefficient} &= \beta_1 + \beta_3 Z \\ \text{Variance} &= \text{var}(\beta_1) + Z^2 \text{var}(\beta_3) + 2Z \text{cov}(\beta_1 \beta_3) \end{aligned}$$

## Results

### Characteristics of LEP Youth in New and Established Immigrant Destination States

Table 2 provides summary statistics by state immigrant destination type for the full sample and for sub-samples of LEP and non-LEP youth. For both LEP and non-LEP students we found that achievement in reading and math was higher for youth living in new destination states than established destination states. This achievement difference, however, was most notable among LEP youth. As seen in Figure 1, the achievement gap between new and established destinations was greater for LEP youth than for non-LEP youth. In both reading and math, LEP youth scored on average about eight points higher on each test in new destination states compared to established destination states, whereas non-LEP youth scored on average only three points higher on each test in new destination states compared to established destination states.

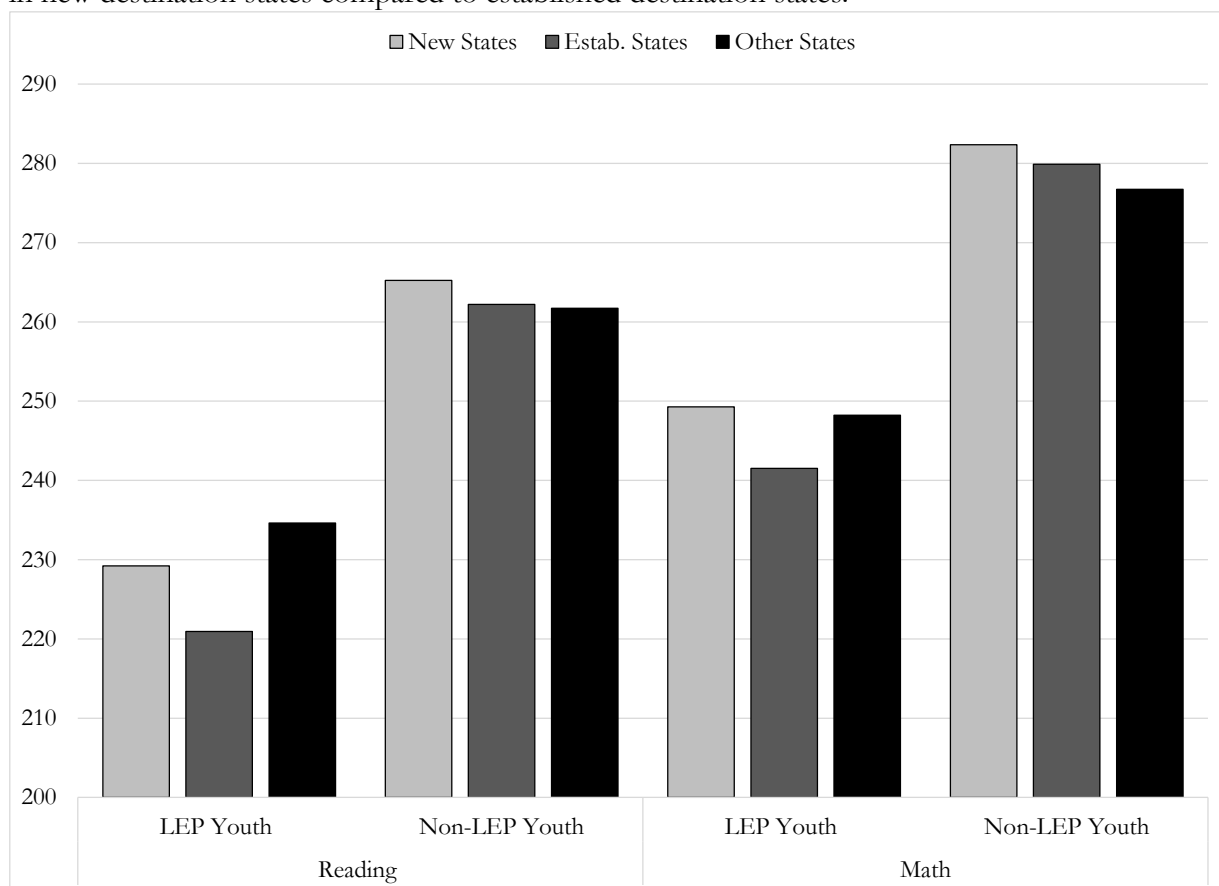


Figure 1. Mean Math and Reading Test Scores by LEP Status and State Immigrant Destination Type

The observed advantage associated with living in new versus established destination states may in part reflect demographic differences between these populations. As seen in Table 2, there was variation in the racial/ethnic demographic composition of LEP youth in new and established destinations. In both destinations, Latinos made up the majority of the LEP population: 66% in new destinations and 81% in established destinations. The share of LEP youth who were white (13%) and Asian (16%), however, was larger in new than established destinations (5% and 12%,

respectively). Moreover, our results indicated that the socio-economic status of LEP youth living in new states was greater than that of their peers in established states. LEP youth in new states compared to those in established states were less likely to qualify for FRL (73% versus 80%) and live in a household where neither parent completed high school (20% versus 23%). In terms of linguistic resources, LEP youth in new states appeared to be at a disadvantage. A greater share of LEP youth in new states received testing accommodations (an indication of more limited English proficiency) to complete the NAEP assessment than their peers in established states (40% versus 21%).

Table 2

*Descriptive Characteristics by LEP Status for Each State Immigrant Destination Type*

	Full Sample			LEP Youth			Non-LEP Youth		
	New States	Estab. States	Other States	New States	Estab. States	Other States	New States	Estab. States	Other States
<b>Test Score</b>									
Reading	264.3 (.01)	258.3 (.12)	261.2 (.03)	229.2 (.23)	221.0 (.29)	234.6 (.36)	265.2 (.02)	262.2 (.16)	261.7 (.04)
Math	281.3 (.02)	276.1 (.33)	276.1 (.01)	249.3 (.38)	241.5 (.68)	248.2 (1.60)	282.3 (.06)	279.9 (.31)	276.7 (.02)
<b>Student Variables</b>									
Female	0.50	0.50	0.50	0.46	0.46	0.47	0.50	0.50	0.50
Age	14.4 (.00)	14.4 (.00)	14.5 (.00)	14.5 (.01)	14.4 (.01)	14.6 (.01)	14.4 (.00)	14.4 (.00)	14.5 (.00)
Race									
White	0.70	0.45	0.74	0.13	0.05	0.12	0.71	0.50	0.76
Black	0.18	0.15	0.18	0.05	0.02	0.04	0.18	0.16	0.18
Hispanic	0.09	0.33	0.06	0.66	0.81	0.76	0.07	0.27	0.05
Asian	0.04	0.07	0.01	0.16	0.12	0.08	0.04	0.06	0.01
Highest Parent Education									
Less than HS	0.06	0.10	0.07	0.20	0.23	0.24	0.06	0.09	0.07
HS	0.19	0.16	0.21	0.17	0.16	0.18	0.19	0.16	0.21
Some College	0.18	0.17	0.18	0.10	0.09	0.11	0.18	0.17	0.18
College Grad.	0.48	0.42	0.46	0.23	0.19	0.19	0.48	0.45	0.46
Don't Know	0.10	0.15	0.09	0.29	0.33	0.28	0.09	0.13	0.08
LEP	0.03	0.10	0.02	--	--	--	--	--	--
Eligible for FRL	0.33	0.46	0.42	0.73	0.80	0.77	0.32	0.42	0.41
Testing Accommodation	0.08	0.07	0.07	0.40	0.21	0.34	0.07	0.06	0.06
Other language spoken in home	0.36	0.58	0.29	0.90	0.93	0.88	0.34	0.54	0.27

Table 2 (Cont'd)

*Descriptive Characteristics by LEP Status for Each State Immigrant Destination Type*

	Full Sample			LEP Youth			Non-LEP Youth		
	New States	Estab. States	Other States	New States	Estab. States	Other States	New States	Estab. States	Other States
<b>School Variables</b>									
Prop. Black	0.17 (.00)	0.15 (.00)	0.18 (.00)	0.17 (.01)	0.11 (.01)	0.11 (.01)	0.17 (.00)	0.15 (.00)	0.18 (.00)
Prop. Hispanic	0.08 (.00)	0.31 (.01)	0.06 (.00)	0.28 (.11)	0.57 (.01)	0.30 (.02)	0.07 (.00)	0.29 (.01)	0.05 (.00)
Prop. Native American	0.01 (.00)	0.00 (.00)	0.02 (.00)	0.02 (.01)	0.00 (.00)	0.03 (.00)	0.01 (.00)	0.00 (.00)	0.02 (.00)
Prop. Asian	0.03 (.00)	0.06 (.00)	0.01 (.00)	0.06 (.00)	0.08 (.01)	0.02 (.00)	0.03 (.00)	0.06 (.00)	0.01 (.00)
Prop. White	0.71 (.00)	0.47 (.01)	0.74 (.00)	0.47 (.01)	0.23 (.01)	0.54 (.01)	0.72 (.00)	0.49 (.01)	0.74 (.00)
Students on FRL									
<25%	0.39	0.26	0.21	0.16	0.09	0.12	0.39	0.28	0.21
26%-50%	0.35	0.30	0.45	0.31	0.22	0.34	0.35	0.31	0.45
>50%	0.19	0.34	0.29	0.44	0.60	0.46	0.19	0.31	0.28
Not reported	0.07	0.10	0.06	0.08	0.10	0.08	0.07	0.10	0.06
Receives Title I funds									
	0.33	0.52	0.44	0.47	0.71	0.48	0.33	0.50	0.44
Students Receiving ESL									
<1%	0.33	0.17	0.44	0.10	0.05	0.16	0.34	0.18	0.45
1-5%	0.44	0.35	0.39	0.26	0.15	0.30	0.44	0.37	0.39
>5%	0.15	0.38	0.10	0.52	0.68	0.45	0.14	0.35	0.09
Not reported	0.08	0.10	0.07	0.12	0.12	0.09	0.08	0.10	0.07
Urbanicity									
City	0.23	0.38	0.20	0.45	0.51	0.36	0.22	0.37	0.19
Suburb	0.45	0.45	0.25	0.38	0.42	0.23	0.46	0.46	0.25
Rural	0.32	0.16	0.55	0.17	0.08	0.41	0.32	0.17	0.55
<b>Teacher Variables</b>									
Non-standard math teacher certification	0.12	0.13	0.07	0.15	0.19	0.06	0.12	0.13	0.07
Non-standard reading teacher certification	0.10	0.13	0.06	0.12	0.15	0.07	0.10	0.13	0.06

Table 2 (Cont'd)

*Descriptive Characteristics by LEP Status for Each State Immigrant Destination Type*

Teacher Variables	Full Sample			LEP Youth			Non-LEP Youth		
	New States	Estab. States	Other States	New States	Estab. States	Other States	New States	Estab. States	Other States
Math teacher yrs experience	11.5	10.9	12.1	9.9	9.0	11.0	11.6	11.1	12.1
Reading teacher yrs experience	11.5	10.8	12.0	9.9	9.9	10.9	11.5	10.9	12.0
N=	193320	71190	137720	7060	7490	3150	186260	63700	134570

*Note.* (1) Differences in means and proportions across state immigrant destination types are statistically significant at the .05 level for all variables and for all three samples. (2) *N*s are rounded to the nearest 10 as required by NCES. (3) We report the student and school characteristics using the math sample (except from the reading test score, non-standard reading teacher certification, and years of teaching experience for reading teachers). (4) Data are weighted. Standard errors are in parentheses.

For school context, we found that students in new immigrant destination states attended schools with greater resources and different school compositions than students in established states. However, we also found evidence to suggest that students in new immigrant destination states attended schools that may lack immigrant-specific resources. Compared to their peers in established destination states, LEP youth living in new destination states were less likely to attend a Title I school (47% versus 71%), to enroll in a school that is majority FRL (44% versus 60%), and to be taught by a non-certified teacher (15% versus 19% in math; 12% versus 15% in reading). On the other hand, we found that LEP youth in new destination states were more likely to attend schools where a lower percentage of youth received ESL services—a potential indication of fewer immigrant-specific resources.

Lastly, even though we found overall school contextual advantages associated with new destination states, our results suggested that within new destination states, LEP youth were disadvantaged. Compared to their non-LEP peers, LEP youth in new destination states were more likely to attend a Title I school (47% versus 33%), a majority FRL school (44% versus 19%), and schools with larger minority populations. Thus, racial/ethnic and economic issues, while potentially lower than in established states, were also a problem in new destination states.

### State Immigrant Destination Type and LEP Student Achievement

In Table 3, we provide the marginal coefficients for the two-way interaction models; we report the full results in Tables 4 and 5. Focusing on Table 3, we found that the observed differences in demographic, family, and school characteristics only accounted for some of the advantages associated with living in a new destination state for LEP youth. The baseline model, which only controlled for variation in achievement across the years observed and testing accommodations, indicated that LEP youth in new destination states on average scored 14.14 points higher in reading and 14.91 points higher in math than their LEP peers in established destinations (Model 1). This advantage was reduced but remained robust once we accounted for demographic differences (Model 2) and differences in familial resources, particularly the relatively higher levels of



parental education and lower rates of poverty observed among LEP youth living in new destination states (Model 3). Our school model (Model 4) indicated that LEP youth living in new destination states benefit from the more favorable ethnic/racial compositions and overall resources, as measured by proportional FRL and teacher credentials associated with these schools, but that schools only account for a small portion of the observed new destination advantage: the marginal coefficients reduce to 9.81 and 9.98, respectively. Thus, the advantage associated with living in a new immigrant destination state stems beyond the protective influences associated with the families and schools in these states.

Table 3

*Marginal Coefficients of State Immigrant Destination Type on Reading and Math Test Scores by LEP Status*

	<b>Model 1 Baseline</b>			<b>Model 2 Demographics</b>			<b>Model 3 Family</b>			<b>Model 4 School</b>		
	<b>ME</b>	<b>(SE)</b>		<b>ME</b>	<b>(SE)</b>		<b>ME</b>	<b>(SE)</b>		<b>ME</b>	<b>(SE)</b>	
A. Reading												
New vs. Estab.												
LEP	14.14	(1.15)	***	12.32	(1.09)	***	11.34	(1.05)	***	9.81	(1.07)	***
Non-LEP	3.49	(.39)	***	0.74	(.32)	*	0.55	(.28)	+	-0.64	(.30)	*
Other vs. Estab.												
LEP	15.92	(1.36)	***	16.17	(1.24)	***	15.04	(1.21)	***	13.20	(1.20)	***
Non-LEP	-0.78	(.41)	+	-3.22	(.33)	***	-2.09	(.29)	***	-2.19	(.32)	***
B. Math												
New vs. Estab.												
LEP	14.91	(1.08)	***	12.97	(1.02)	***	11.75	(.94)	***	9.98	(.95)	***
Non-LEP	3.05	(.45)	***	-0.04	(.34)		-0.09	(.30)		-1.07	(.31)	**
Other vs. Estab.												
LEP	11.68	(1.29)	***	12.62	(1.15)	***	11.62	(1.09)	***	9.39	(1.07)	***
Non-LEP	-3.09	(.47)	***	-5.77	(.36)	***	-4.36	(.32)	***	-4.15	(.34)	***

*Note:* (1) Data are weighted. (2) Standard errors are clustered by school. (3) Models include the same controls as the corresponding model in Table 4.

+ $p < .10$ , \*  $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Providing some support for the economies of scale argument associated with more highly concentrated LEP schools, we found that schools with a larger percentage of students receiving ESL services had a positive effect on achievement in math and to a lesser extent in reading (Model 4 in Tables 4 and 5). The coefficients on the ESL categories were positive and significant (reference category was less than 1% ESL). Thus, ESL services were positively associated with achievement, but, as seen in Table 2, the availability of these services was lower in new compared to established states.

Table 4

*Regressions of Math Test Scores for Eighth Grade Youth by State Immigrant Destination Type and LEP Status*

	<b>Model 1 Baseline</b>			<b>Model 2 Demographics</b>			<b>Model 3 Family</b>			<b>Model 4 School</b>		
	<b>b</b>	<b>(SE)</b>		<b>b</b>	<b>(SE)</b>		<b>b</b>	<b>(SE)</b>		<b>b</b>	<b>(SE)</b>	
<b>Main Effects</b>												
New Immigrant State	3.05	(.45)	***	-0.04	(.34)		-0.09	(.30)		-1.07	(.31)	***
Other Immigrant State	-3.09	(.47)	***	-5.77	(.36)	***	-4.36	(.32)	***	-4.15	(.34)	***
LEP	33.11	(.81)	***	-27.21	(.73)	***	-22.72	(.69)	***	-21.44	(.70)	***
<b>Two-Way Interaction</b>												
New Immigrant*LEP	11.87	(1.09)	***	13.01	(1.02)	***	11.84	(.94)	***	11.05	(.94)	***
Other Immigrant*LEP	14.76	(1.30)	***	18.38	(1.16)	***	15.98	(1.10)	***	13.54	(1.07)	***
<b>Demographics</b>												
Female				-3.84	(.14)	***	-3.31	(.14)	***	-3.34	(.13)	***
Age				-7.13	(.15)	***	-5.43	(.14)	***	-5.28	(.13)	***
Race												
White (ref.)												
Black				-31.91	(.28)	***	-26.02	(.26)	***	-22.35	(.27)	***
Hispanic				-20.93	(.32)	***	-11.93	(.32)	***	-8.88	(.31)	***
Asian				6.31	(.63)	***	8.06	(.55)	***	8.68	(.44)	***
<b>Family Characteristics</b>												
Highest Parent Education												
Less than HS							-15.22	(.31)	***	-13.93	(.31)	***
HS							-13.43	(.20)	***	-12.40	(.20)	***
Some College							-4.15	(.20)	***	-3.40	(.19)	***
College Graduate (ref.)												
Eligible FRL							-10.51	(.20)	***	-8.05	(.19)	***
Other Language in Home							0.35	(.16)	*	0.29	(.16)	
<b>School Variables</b>												
Prop. Black										-3.85	(.64)	***
Prop. Hispanic										-3.63	(.89)	***

Table 4 (Cont'd)  
*Regressions of Math Test Scores for Eighth Grade Youth by State Immigrant Destination Type and LEP Status*

	<b>Model 1 Baseline</b>			<b>Model 2 Demographics</b>			<b>Model 3 Family</b>			<b>Model 4 School</b>		
	<b>b</b>	<b>(SE)</b>		<b>b</b>	<b>(SE)</b>		<b>b</b>	<b>(SE)</b>		<b>b</b>	<b>(SE)</b>	
Prop. Asian										-1.43	(2.03)	
Prop. Native American										-16.91	(2.26)	***
FRL Categories												
<25% (ref.)												
26%-50%										-5.36	(.30)	***
>50%										-7.47	(.44)	***
Receives Title I funds										-1.26	(.27)	***
ESL Categories												
<1% (ref.)												
1-5%										1.85	(.28)	***
>5%										1.10	(.44)	*
Urbanicity												
City (ref.)												
Suburb										-0.87	(.33)	**
Rural										-0.99	(.36)	**
<b>Teacher Variables</b>												
Non-Standard Certification										-2.73	(.34)	***
Years of Experience										0.19	(.01)	***
Constant	279.54	(.53)	***	394.14	(2.21)	***	376.24	(2.00)	***	375.95	(2.01)	***
<b>Fixed Effects</b>												
Testing												
Accommodation	Y			Y			Y			Y		
Year	Y			Y			Y			Y		

(1) N=402,240 (rounded to the nearest 10 as required by NCES). (2) Standard errors are clustered by school.

(3) All models include dummy variables for missing values on parent education, % FRL, receives Title 1, % ESL, and non-standard teacher certificate.

Regressions of Reading Test Scores for Eighth Grade Youth by State Immigrant Destination Type and LEP Status

[illegible]

Table 5 (Cont'd)  
*Regressions of Reading Test Scores for Eighth Grade Youth by State Immigrant Destination Type and LEP Status*

	<b>Model 1</b> <b>Baseline</b> <b>b (SE)</b>	<b>Model 2</b> <b>Demographics</b> <b>b (SE)</b>	<b>Model 3</b> <b>Family</b> <b>b (SE)</b>	<b>Model 4</b> <b>School</b> <b>b (SE)</b>	
<25% (ref.)					
26%-50%				-4.59 (.28)	***
>50%				-6.68 (.40)	***
Receives Title I funds				0.13 (.25)	
ESL Categories					
<1% (ref.)					
1-5%				0.54 (.26)	*
>5%				-0.73 (.38)	
Urbanicity					
City (ref.)					
Suburb				0.06 (.30)	
Rural				-1.12 (.31)	***
<b>Teacher Variables</b>					
Non-Standard Certification				-1.17 (.31)	***
Yrs Experience				0.09 (.01)	***
Constant	264.06 (.47) ***	359.69 (2.12) ***	342.44 (1.90) ***	342.85 (1.90) ***	
<b>Fixed Effects</b>					
Testing					
Accommodation	Y	Y	Y	Y	
Year	Y	Y	Y	Y	

(1)  $N=406,600$  (rounded to the nearest 10 as required by NCES). (2) Standard errors are clustered by school.

(3) All models include dummy variables for missing values on parent education, % FRL, receives Title 1, % ESL, and non-standard teacher certificate.

### State Immigrant Destination Type and LEP Student Achievement for Each Racial/Ethnic Group

Next, we assessed how white, black, Latino, and Asian LEP youth fare in new and established destination states by adding three-way interactions between LEP status, race/ethnicity, and state immigrant destination type to the models. For ease of interpretation, in Table 6 we presented the total marginal coefficients and only presented the interactions for new destination states. (Full model results and marginal coefficients for other destination states available upon request). In the full model (Model 4), both LEP Latino and Asian youth in new destination states compared to their peers in established states scored almost a third of a standard deviation higher in reading and math. Though the marginal coefficients for black and white LEP youth were positive, they were smaller and non-significant.

Table 6  
*Marginal Coefficient between State Immigrant Destination Type, Race, and LEP Status for New and Established Destinations*

		<b>Model 1 Baseline</b>		<b>Model 2 Demographics</b>		<b>Model 3 Family</b>		<b>Model 4 School</b>	
		<b>ME</b>	<b>(SE)</b>	<b>ME</b>	<b>(SE)</b>	<b>ME</b>	<b>(SE)</b>	<b>ME</b>	<b>(SE)</b>
A. Read									
New vs. Estab.									
White									
LEP		5.24	(4.16)	5.03	(4.16)	5.41	(3.96)	4.84	(3.91)
Non-LEP		0.44	(.40)	0.87	(.39) *	1.06	(.34) **	-0.01	(.35)
Black									
LEP		7.64	(4.44) +	8.95	(4.26) *	8.19	(4.29) +	6.51	(4.29)
Non-LEP		0.27	(.60)	0.45	(.57)	0.11	(.53)	-1.04	(.53) *
Latino									
LEP		12.35	(1.22) ***	12.84	(1.20) ***	11.40	(1.16) ***	9.63	(1.17) ***
Non-LEP		0.26	(.54)	0.81	(.53)	-0.37	(.50)	-2.20	(.52) ***
Asian									
LEP		11.94	(3.09) ***	12.48	(3.08) ***	12.43	(2.91) ***	10.59	(2.82) ***
Non-LEP		-0.79	(1.07)	-0.43	(1.07)	-1.48	(.91)	-2.84	(.85) **
B. Math									
New vs. Estab.									
White									
LEP		3.62	(3.43)	4.89	(3.43)	5.10	(3.33)	5.15	(3.23)
Non-LEP		-0.34	(.41)	0.15	(.41)	0.57	(.35)	-0.36	(.36)
Black									
LEP		4.25	(4.69)	3.64	(4.46)	2.73	(4.37)	1.71	(4.22)
Non-LEP		-0.16	(.64)	0.13	(.63)	-0.34	(.58)	-1.09	(.56) +
Latino									
LEP		14.05	(1.15) ***	14.70	(1.15) ***	13.17	(1.08) ***	11.04	(1.08) ***
Non-LEP		-0.82	(.56)	-0.38	(.57)	-1.58	(.54) **	-3.19	(.55) ***
Asian									
LEP		11.83	(2.78) ***	12.96	(2.77) ***	11.58	(2.39) ***	9.49	(2.28) ***
Non-LEP		-3.96	(1.33) **	-3.23	(1.32) *	-3.76	(1.15) ***	-4.70	(1.11) ***

*Note.* (1) Data are weighted. (2) Standard errors are clustered by school. (3) Models include the same controls as the corresponding model in Table 3 and include interactions between LEP status, race, and other destination. +p<.10, \* p<.05, \*\*p<.01, \*\*\*p<.001

## Sensitivity Analysis

Because schools ultimately identified LEP youth and determined which LEP youth completed the NAEP test, there was still the potential that any systematic exclusion of LEP students may bias results (Braun, Zhan, & Vezzu, 2009). Schools were allowed to exclude LEP students from taking the NAEP if their English language skills were so limited that even with accommodations they could not participate meaningfully in the test. However, schools had to report the percentage of youth excluded for this reason. NCES's (2005) own investigation of the potential LEP exclusion bias indicated a near zero effect. Nevertheless, we also used school reports of the percent of LEP youth excluded from taking the test in order to compare exclusion rates across our state immigrant destination type. We found a slightly higher (though not statistically significant) exclusion rate in established states (reading: 6.2%; math 4.6%) compared to new (reading: 5.5%; math 4.6%) and other (5.4% and 3.7%) destination states. If we assumed this variation in exclusion rates reflected unobserved systematic state bias and not true differences across students, then our results actually underestimated the LEP achievement gap between new and established states. Since excluded LEP youth are expected to perform worse on NAEP tests, the higher exclusion rate in established states should bias their test scores upward and underestimate the gap between new and established states. Thus, any exclusion rate bias would not change the overall conclusions of our study.

## Discussion

In an era of increased school accountability pressures, states must address the needs of a growing and increasingly dispersed child of immigrant population. To assess how well new immigrant destination states are performing in comparison to more established immigrant destination states, we examined how the academic achievement of LEP youth—the sub-group that most directly identifies children of immigrants—during the critical middle school years (eighth grade) differed between these two state immigrant destination types. The results of our study provide useful insights as the nation shifts away from the No Child Left Behind Act (NCLB) of 2001 to the Every Student Succeeds Act (ESSA) of 2015, which maintains and actually increases school accountability for Limited English Proficient (LEP) youth but allows greater state discretion in enforcing this accountability (Pompa, 2015). Under ESSA, states must now devise a standardized process for identifying LEP students, thus ensuring at least statewide consistency in LEP classification—an improvement over NCLB. However, states, not the federal government, are now charged with devising their own accountability systems and determining if academic standards are met. Thus, moving forward there will no longer be one federal accountability system but instead 50 different accountability systems. Understanding the unique needs and resources of LEP youth in new and established destination states can provide insights as the nation's 50 states revise their own LEP accountability systems.

We found that overall math and reading test scores on NAEP for LEP youth were higher in new destination states compared to those in established destination states, but only for Asian and Latino youth, not white and black youth. These results align with prior research that finds a relative academic advantage associated with living in a new versus established destination community (Perreira, Fuligni, & Potochnick, 2010; Stamps & Bohon, 2006). Though other research indicates that immigrant youth in new immigrant areas are relatively disadvantaged (Dondero & Muller, 2012; Fischer, 2010), these studies focus on youth during their high school years and do not examine LEP youth, an important sub-group of children of immigrants. Our results suggest that among middle school aged youth, LEP youth in new destination states are faring better than their established destination peers from 2003 to 2008.

Part of this advantage stemmed from the fact that LEP youth in new immigrant destinations benefited from more favorable demographic characteristics and family and school resources. These differences, however, only explained a small portion of the higher achievement rates in new compared to established immigrant destination states. Compared to LEP youth in established destination states, LEP youth in new destination states were more likely to be white or Asian, to report higher levels of parent education, and to not qualify for free and reduced-price lunch (FRL)—factors that are typically associated with higher levels of achievement (Kao & Thompson, 2003). These demographic and family differences highlight unique challenges facing new and established destination states. Established destination states are challenged with educating a larger LEP population with relatively lower levels of human capital than their LEP peers in new destination states. New destination states, on the other hand, are challenged with responding to the needs of a small but rapidly growing LEP population that is more ethnically and racially diverse, which may also mean more linguistically diverse, than their peers in established destinations.

In terms of school context, our results align with prior research that finds schools in new immigrant destination states benefit from greater overall resources and more favorable compositional characteristics (Dondero & Muller, 2012; Fry, 2011). LEP youth in new destination states attended schools with a larger cohort of white peers and fewer students who qualified for FRL. Moreover, they were more likely to be taught by a teacher certified in the subject area. Extant research has shown that attending schools with a larger white, middle-class student population can generate structural advantages that improve overall student achievement (Kao & Thompson, 2003; Ryabov & Van Hook, 2006) and that teacher credentials strongly influence achievement (Clotfelter, Ladd, & Vigdor, 2007).

Prior research also suggests that schools in new immigrant destination states lack immigrant-specific resources (Dondero & Muller, 2012; Fry, 2011). We found weak evidence to support this finding: LEP youth in new destination states compared to established states attended schools with a lower percent of students receiving ESL services, a proxy measure for immigrant-specific school resources, and ESL enrollment was positively associated with achievement. ESL enrollment, however, is a weak indicator for immigrant-specific resources. Instead, future research is needed to better assess what immigrant-specific resources are available for LEP youth in new destination states, e.g., language training for teachers, bilingual staff, ESL courses, and which of these resources are most effective at addressing LEP youths' educational needs.

Ultimately, we were unable to fully explain the advantage associated with living in a new destination state. The remaining advantage may in part reflect migrant selection and variation in the immigrant generational make-up of LEP youth. Given that we found more socio-economically advantaged LEP families lived in new destination states, these families may also have benefited from additional unobservable resources that contributed to their relative success—a result found in previous research (Stamps & Bohon, 2006). Our inability to control for self-selection into new and established destination states is also a limitation of our study.

Additionally, though the NAEP data has many advantages, i.e., large nationally representative sample that allows cross-state comparison of the achievement of LEP youth, the data is cross-sectional, which precludes causal identification. The state-level is also the lowest geographic unit identifiable in the NAEP data. Thus, we cannot account for variation within states in terms of immigrant history, e.g., new destination areas within an established destination state. Lastly, though NAEP has detailed school context data, the data on family background is more limited. Thus, we were unable to identify the generational status of LEP youth. Academic achievement often differs between first, second, and third-plus generation immigrant youth due to differences in familial resources, access to government supports, and co-ethnic supports (Portes & Rumbaut, 2001). Thus,



differences in the generational composition of LEP youth may explain differences in achievement between new and established immigrant destinations. However, there are also important within-generational differences, and LEP status is one of those differences. LEP youth, no matter their generational status, face similar linguistic challenges that are likely to impede achievement. Thus, while our paper assesses the implications of these linguistic challenges by focusing on LEP youth, future studies should explore whether the implications of these linguistic challenges are greater for different immigrant generations.

Overall, our results suggest optimism and caution as new immigrant destination states work towards ensuring LEP youth meet 100% proficiency, a goal of NCLB and ESSA. The greater overall resources and economic and social integration observed in NAEP schools in new immigrant destination states compared to those in established states provides grounds for optimism that LEP youth in new destination states can more rapidly close the linguistic achievement gap. To do so, however, schools in new destination states will need to develop more immigrant-specific support services without falling into the school segregation pitfalls that have plagued schools in established destination states (Fry, 2011). To ensure students' success in all states, more research is needed to assess what programs work for LEP youth and if the same programs can be as effective in new and established destination states. The need for this information is of growing importance as states, rather than the federal government, are designing their own school accountability systems for LEP youth.

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