

School Stratification in New and Established Latino Destinations

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The growth and geographic diversification of the school-age Latino population suggest that schools in areas that previously had very few Latinos now serve many of these students. This study uses the 1999-2000 Schools and Staffing Survey and the Education Longitudinal Study of 2002 to compare public high schools in new and established Latino destinations. We examine school composition, school quality indicators, instructional resources and access to advanced math courses. We find that schools in new destinations display more favorable educational contexts according to a number of measures, but offer fewer linguistic support services than schools in established destinations. We also find evidence of a within-school Latino-white gap in advanced math course taking in new destinations, suggesting greater educational stratification within schools in those areas.

Introduction

Over the past two decades, the United States has experienced a substantial increase in its Latino population. Numbering an estimated 50.5 million, Latinos now constitute approximately 16 percent of the country's total population and are the nation's largest minority group (Humes et al. 2011). The Latino youth population in particular represents one of the largest and fastest-growing segments of the total U.S. youth population. The share of children younger than 18 years of age who are Latino is expected to increase from 20 percent in 2005 to 35 percent in 2050 (Passel and Cohn 2008).

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This growth has occurred alongside an unprecedented geographic diversification of Latinos (Lichter and Johnson 2009). Once characterized by their concentration in a handful of traditional or “established” Latino settlement states such as California, Texas and Florida, Latinos are now becoming increasingly dispersed across the country, with many moving to states that previously had very few Latino residents (Fry 2008, Kandel and Cromartie 2004, Liaw and Frey 2007). Although established Latino states still remain home to the majority of the country’s Latino population, their overall share of Latinos has decreased since the 1990s (Guzmán and McConnell 2002). In contrast, the proportion of Latinos in several “new growth” states, mainly in the Southeast, Midwest and Northwest, has increased dramatically (Fischer and Tienda 2006, Pew Hispanic Center 2005). Recent settlement patterns also point to a shift away from traditional urban centers and toward rural, small town and suburban areas around the country (Kandel and Cromartie 2004; Suro and Singer 2002). In fact, Latinos now represent the fastest-growing population in rural and small-town America (Kandel and Cromartie 2004).

This dramatic population growth and redistribution has reshaped the racial and ethnic landscape in new destination communities and, as a result, carries a number of individual and community-level implications that warrant increased research attention. Education represents one realm in which the implications of this population change are likely to be particularly acute. The growth and geographic diversification of the school-age Latino population suggest that schools in areas that previously had very few Latinos now provide the primary source of education for these students, many of whom exhibit risk factors that may place them at a disadvantage in the U.S. public education system. For example, although the majority of Latino students in public schools are native-born, approximately two thirds of them have at least one foreign-born parent (Fry and Gonzales 2008). Moreover, many Latinos in new destinations are foreign-born (Lichter and Johnson 2009). This implies that many Latino students and parents, especially those in new destinations, may be unfamiliar with the U.S. education system (López 2001).

In addition, approximately 70 percent of Latino public high school students report speaking a language other than English in the home, and of those, 18 percent report difficulty speaking English. Latino public school students are also disproportionately more likely than their non-Latino counterparts to live in poverty and, of all the major racial and ethnic groups in the United States, are the least likely to have college-educated parents (Koball, Chau and Douglas-Hall 2006). Furthermore, many Latino public school students identify or are perceived as nonwhite, placing them at increased risk of racial discrimination (Fry and Gonzales 2008). Research is needed to assess how schools in new Latino destinations are accommodating the academic, social and linguistic needs of this group of students.

Despite literature that shows that both destination and school factors matter for the educational outcomes of immigrant and minority children (Pong and Hao 2007; Portes and MacLeod 1996; Portes and Zhou 1993), few studies have examined school contexts in new Latino destinations. Still fewer studies

have systematically compared school contexts in new and established Latino destinations (Stamps and Bohon 2006). Indeed, the current literature on Latino education is based almost entirely on the experiences of Latinos in established destinations, in part because the geographic diversification of Latinos is a relatively recent phenomenon (Marrow 2005). Therefore, we know little about the schools that Latinos in new destinations attend and how they compare with schools in established destinations.

The central purpose of our study is to analyze the educational landscape in new Latino destinations in terms of school composition, quality of education, instructional resources and access to learning opportunities for Latino students. Specifically, we investigate the following questions: (1. do the characteristics of public high schools and educators in new and established Latino destinations differ? and (2. does access to learning opportunities for Latino students vary by destination type? We explore these questions through a two-part analysis. The first part addresses our first question by using data from the 1999-2000 Schools and Staffing Survey (SASS) to create a large-scale comparative descriptive portrait of public school and educator characteristics in new and established Latino destinations. The second part addresses our second question by using data from the Education Longitudinal Study of 2002 (ELS 2002) to analyze variation in exposure to advanced courses – which we measure as the Latino-white gap in college-preparatory math course taking – by destination type. Our study fills a gap in the existing literature on education in new Latino destinations by providing a profile of schools and learning opportunities in those areas. Findings offer insight into school contexts in new destinations and contribute to a growing body of research that will help researchers assess the extent to which the current integration literature captures the experiences of Latino youth in new destinations (Alba et al. 2010; Marrow 2005).

Background

Schools, Place and the Educational Integration of Latino Youth

Theories of immigrant and minority integration conceptualize contextual factors as important predictors of socioeconomic integration (Portes and Zhou 1993). In particular, segmented assimilation theory underscores the role that context of reception plays – in combination with individual-level characteristics – in shaping the incorporation process for immigrants and minorities. Context of reception is influenced by a number of factors including location of residence, size and structure of the co-ethnic community and values of the receiving community, among others (Portes and Zhou 1993; Zhou 1997). Our study explores how the intersection of two sets of receiving contexts – school and place-level factors – shapes educational access and learning opportunities for Latino students.

For immigrant and minority youth, schools comprise a critical context of reception because they represent a primary site of social and bureaucratic incorporation and provide the knowledge and skills necessary to pursue postsecondary education and employment. Researchers have identified several school-level

characteristics that are associated with the educational integration of immigrant and minority youth. [Portes and Zhou \(1993\)](#) emphasize the role of school socioeconomic status (SES) and the concentration of minority students within schools. They contend that the concentration of children of immigrants in low-income urban areas means that many of them attend resource-poor schools where they come into contact with the antieducation “oppositional culture” of minority youth of native parentage. This exposure to poor quality of education and/or adoption of adversarial attitudes can threaten academic success and increase the risk of downward mobility.

Although the assertion that solidarity with native minority youth leads to negative consequences remains a source of debate ([Waldinger and Feliciano 2004](#)), there is a general recognition of an association between school SES and minority concentration and students’ educational outcomes. For example, [Portes and MacLeod \(1996\)](#) find a positive relationship between first- and second-generation students’ math test scores and attendance at high SES, suburban schools. [Goldsmith’s \(2009\)](#) study shows that attendance at a high-proportion black or Latino high school is associated with lower educational attainment in the long term.

[Hao and Pong \(2008\)](#) provide further insight by underscoring the importance of two sets of school attributes: structural attributes such as school sector, demographic composition, course and program offerings and relational attributes such as academic climate, teacher-student relations and teachers’ and administrators’ sense of collective responsibility for students. They find that both sets of school attributes predict postsecondary outcomes of children of immigrants. Determining what such attributes look like in new destinations will inform our understanding of the educational experiences of Latino students in those areas.

In addition to school-level variables, place of residence is also considered influential in the integration process because it is linked to access to resources and social networks that determine quality of life ([Fischer 2010](#)). From this literature, we derive three hypotheses that guide our analysis. First, we hypothesize that schools in new Latino destinations may be less equipped than schools in established destinations to meet the diverse needs of Latino students. Previous research considers areas with a long-standing tradition of immigration and/or a sizeable co-ethnic population better able to facilitate integration because infrastructures and social networks are already in place to aid newcomers in their adjustment to the area ([Singer 2004](#)). Emerging research on schools in new destinations (which we discuss in detail in the following section) provides some support for this hypothesis. Such research indicates that schools in new destinations are experiencing difficulties meeting the needs of these new students and are facing problems such as teacher shortages, lack of funding, inadequate English as a Second Language (ESL) services, discrimination toward Latino students and limited parental involvement ([Bohon, Macpherson and Atilas 2005](#); [Griffith 2008](#); [Kandel and Parrado 2006](#); [Wainer 2006](#)). Although these studies are not comparative in nature, their findings imply that schools in new destinations may be less equipped than schools in established destinations to serve Latino students.

Our second hypothesis explores the possibility that Latinos in new destinations may be in areas with stronger schools. To formulate this hypothesis, we draw on the theoretical underpinnings from the segmented assimilation and residential segregation literatures. Following segmented assimilation theory, the concentration of Latino youth in established destinations in low income urban areas means that many Latino students likely attend resource-poor schools that, together with other individual and structural-level factors, may negatively affect their educational outcomes (Gans 1992; Portes and Zhou 1993). Similarly, the spatial assimilation perspective put forth by studies of residential segregation has traditionally considered the suburbanization of immigrants and minorities to be positively associated with socioeconomic integration (Alba et al. 1999; Alba and Denton 2004; Massey 1985). The logic of these theoretical models points to the possibility that the movement of Latinos into new areas of the country may provide Latino students in new destinations access to better schools than in established destinations. Fry's (2011) study of public schools in new Latino settlement metropolitan areas offers some support for this hypothesis. He finds that, on average, public schools in new Latino settlement areas are smaller and more affluent than public schools in established Latino settlement areas.

Our third hypothesis, adapted from the residential and school segregation literatures, posits that Latino students in schools in new destinations may be more stratified relative to white students than are their counterparts in schools in established destinations. Recent research on residential segregation in new destinations suggests that the spatial assimilation model does not neatly fit the experiences of Latinos in these areas and argues instead that the integration of Latinos in new destinations is best explained by a theoretical framework that incorporates both the spatial assimilation perspective and the place stratification perspective (Lichter et al. 2010; Park and Iceland 2011). The latter theoretical model emphasizes the existence of within-place hierarchies (Alba and Logan 1993). That is, it acknowledges that stratification exists not only across places but also within them. Therefore, even if Latinos in new destinations are living in better neighborhoods than Latinos in established destinations, they may nevertheless occupy a more subordinate position relative to whites that inhibits their chances for socioeconomic mobility. Such stratification is evident in the high (Lichter et al. 2010) and increasing (Park and Iceland 2011) levels of Latino-white residential segregation in new destinations.

Similar stratification processes may be taking place in schools in new destinations. Within-school stratification often takes the form of differential academic course placement of white and minority students. Disproportionate placement of minority students in lower level classes segregates students within schools and results in fewer opportunities to learn for minority students (Mickelson 2001). Recent work finds evidence of such academic segregation in racially diverse high schools, where Latinos are more underrepresented in advanced math courses relative to whites (Muller et al. 2010). Additionally, schools with higher levels of Latino underrepresentation in advanced math courses tend to be schools with higher overall levels of SES and academic performance. Advanced math course taking is a key indicator of stratification within schools because of the highly

sequenced structure of math curricula in the United States, where opportunities to enroll in advanced math depend on course placement in the earlier years of high school. Furthermore, advanced math coursework is an important indicator of college readiness (Adelman 1999).

To assess the first two hypotheses about school resources and quality of education, we compare various school-level characteristics in new and established Latino destinations. To assess the third hypothesis about within-place stratification, we move to the student-level to compare the Latino-white gap in access to advanced math courses.

Schools in New Latino Destinations

Having established the theoretical motivations for our study, we turn now to an overview of the existing research on schools in new Latino destinations, which, along with the aforementioned research on the role of school context, will structure our comparison of school characteristics. This group of studies – most of which are case studies – calls attention to the changes and challenges that have accompanied Latino population growth in schools in new destinations and the ways in which schools are responding. Kandel and Parrado (2006) address this topic through a set of case studies examining public school response to Latino population growth in two new destination communities in the South. Their analysis of an elementary school in rural Mississippi identifies limited funding and resources as the main problems the school district faces in accommodating the influx of Latino students. The school relies on assistance from external organizations, such as local churches and businesses, to offer supplemental resources, such as tutoring and English language instruction, to these students. Their analysis of an elementary school in urban North Carolina reveals similar problems. There the district uses a family-oriented approach that provides linguistic support services to parents and students to better engage foreign-born parents with their children's school.

Other research uncovers systemic discrimination toward Latino students in new destinations (Wainer 2006). Such discrimination manifests itself in the form of disproportionate placement of Latino students in lower level or remedial classes. As a principal from a school in a new destination community in North Carolina notes, “Latino students are in the cycle of permanent remediation classes and have become stuck in a lower performing cycle because of the lack of services. The district is creating a lower performing subgroup” (Wainer 2006:157).

Another commonly cited problem is the shortage of qualified ESL or bilingual teachers (Bohon, Macpherson and Atilas 2005; Terrazas and Fix 2009; Wainer 2006). In many cases, teacher shortages are compounded by fiscal crises that limit the recruitment and hiring of new teachers (Terrazas and Fix 2009). In response to shortages, some districts have implemented strategies such as hiring incentives and alternative teaching certification or have created binational teacher exchange and foreign teacher recruitment programs (Hamann 2003, Terrazas and Fix 2009).

Griffith (2008) highlights other innovative school responses to demographic change in his comparative study of four new immigrant-receiving communities in the South and Midwest. School administrators in the two Midwestern towns went beyond offering standard ESL instruction to make immigrant students feel welcome by hosting cultural training sessions for faculty and staff, establishing a bilingual education program and organizing community service trips to immigrants' sending communities.

Together, these studies suggest that schools in new destinations can be characterized by both challenge and creativity in the face of demographic change. They also underscore considerable variation in the types of school responses to Latino population growth. As helpful as these studies are in assessing some of the ways in which schools and educators in new destinations are serving Latino students, they provide only a partial picture of the educational contexts in these communities. Our study builds on this work by using large-scale educational survey data to analyze school characteristics and resources and access to learning opportunities for Latino students in new destinations.

We derive further motivation for our study from two previous studies that find disparities in educational outcomes – specifically, in educational attainment (Stamps and Bohon 2006) and high school attrition rates (Fischer 2010) – in new and established destinations. Although these studies do not focus explicitly on schools, their findings suggest that schools may be one of the factors contributing to these disparities. However, because both studies rely on U.S. Census data, they do not have information about schools, and thus cannot assess the role that schools play in creating or reinforcing these disparities. Our study begins to address this need by employing educational datasets with detailed school and student-level measures to determine (1. if the characteristics of public high schools and educators in new Latino destinations differ from those in established Latino destinations and (2. if Latino students' relative exposure to college-preparatory math courses varies by destination type.

Data and Methods

Our analysis of schools and learning opportunities in new Latino destinations proceeds in two parts. The first part describes differences in characteristics of public high schools in new and established Latino destinations. The second part analyzes variation in the Latino-white gap in college-preparatory math course taking by destination type. Because no single dataset best addresses our research questions, we rely on two large-scale educational datasets and employ two different analytical strategies. We discuss the data, samples and analytical strategies separately for each analysis. Before doing so, we describe our method of classifying new and established Latino destinations.

Defining New and Established Latino Destinations

Researchers have defined new and established destinations on various geographic levels including region, state, metropolitan area and county (Lichter and

Johnson 2009). Though cutoff points vary, most definitions comprise the following two components: the concentration of Latinos in a specified geographic area in 1990 and the percent change in the Latino population in that area between 1990 and 2000 (Fischer 2010). We define new and established Latino destinations on the school district level. We obtain estimates of the Latino student population from the National Center for Education Statistics' School District Demographic System (SDDS), which provide tabulations, based 1990 and 2000 U.S. Census data, of Latino students enrolled in all school districts in the United States. To be able to measure the rate of growth in a district's Latino student population, we retain only those districts that existed in both 1990 and 2000.

We adapt Fischer's (2010) typology of immigrant destinations to construct our indicators of new and established Latino destination districts. We first identify districts that had at least 25 Latino students enrolled in 2000. We selected 25 students as the cutoff point because it approximates the average class size in public high schools (Coopersmith 2009). We classify districts that were below the 50th percentile for the percent Latino students enrolled in 1990, at or above the 50th percentile for percent change in the Latino student population between 1990 and 2000, and had at least 25 Latino students in 2000 as "new" Latino destinations. We categorize districts that were above the 50th percentile for percent Latino students enrolled in 1990 as "established" Latino destinations. We classify districts that were below the 50th percentile for percent Latino students enrolled in 1990 and that did not experience exceptionally high rates of growth in their Latino student population (i.e., growth rates below the 50th percentile) during the 1990s as "other" districts.^{1,2} After assigning a Latino destination type to each district, we link the schools in the SASS and ELS data to their corresponding districts in the SDDS data.

Analyzing School Characteristics: Data, Sample and Analytical Strategy

Our analysis of school characteristics in new and established Latino destinations uses public school and teacher data from the 1999-2000 SASS, an ideal dataset for our research questions because it is the largest and most comprehensive survey of detailed district, school and educator characteristics in the United States and is nationally representative of public schools.³ Our sample comprises 3,600 public schools that serve, at minimum, grades 10-12.⁴ We further limit our sample to schools with at least one Latino student enrolled ($N = 2,950$ schools) to ensure that we are analyzing schools that Latino students attend and not simply schools in districts that have Latino students enrolled. We then include only those schools whose districts are represented in the merged SDDS dataset (for 1990 and 2000), bringing our final sample size to 2,300 public high schools. We also analyze characteristics of teachers from the schools included in our sample ($N = 14,210$ teachers).

For our comparative analysis of schools and educators, we select variables that previous research has shown to be associated with the educational outcomes of Latinos and/or are related to problems described in previous studies of schools in new Latino destinations. We classify these characteristics into three categories: compositional attributes, quality of education indicators and

linguistic support services. The compositional attributes provide information about the geographic, racial, ethnic, linguistic and socioeconomic makeup of the schools. Specifically, we report urbanicity and the mean percentages of students who are a racial/ethnic minority, students who have limited English proficiency (LEP) and students who were eligible for free or reduced lunch, a commonly used measure of school-level SES.

The quality of education indicators include student-teacher ratio, the percentage of schools reporting any teaching vacancies in the last year, the percentage of schools at, above or below their total enrollment capacity, the mean percentage of 12th-grade students who graduated in 2000 and the mean percentages of graduates who enrolled in a 4-year college, 2-year college or technical school. On the teacher level, the quality of education indicators include measures of experience (years teaching in public schools), educational background (percentage of teachers with a bachelor's degree, master's degree and state certification in his/her main teaching field) and perceptions of the degree to which issues such as parental involvement, poverty and drop out are problematic at their schools. The perceived school problems variables are scales ranging from 1 (*not a problem*) to 4 (*serious problem*). We report the average perception by destination type.

Our first measure of linguistic support services indicates the percentage of schools that report using one or more of the following eight methods to identify LEP students: information from parents, teacher observation or referral, home language survey, student interview, student records, achievement tests and language proficiency tests. Additional measures of linguistic support services include the percentage of schools offering a specific program for LEP students, and among schools offering a specific LEP program, the type of LEP instruction offered (ESL/bilingual/structured immersion, native language maintenance instruction and/or instruction in the regular English classroom), the language of subject matter courses for LEP students and additional methods of LEP instruction. Other indicators include the percentage of schools reporting any ESL teacher vacancies and the average number of outreach and translation services offered for LEP parents. Our teacher-level indicator of linguistic support services is the percentage of teachers who have recently participated in professional development training in LEP instruction.

We conduct one-way analysis of variance and chi-square tests to test for significant differences by destination type in the means and proportions of the school and teacher characteristics. Because we make multiple comparisons, thereby increasing the risk of Type I error, we use Bonferroni-adjusted p-values to determine statistical significance. We weight analyses using the appropriate school or teacher final weights to account for sampling design and nonresponse (Tourkin et al. 2004).

Analyzing Access to Advanced Math Courses: Data, Sample and Analytical Strategy

Data for our analysis of variation in access to college-preparatory math courses come from the ELS 2002, a study that followed a nationally representative

cohort of 10th-grade students in 2002 throughout high school and the transition into postsecondary education and the labor force, with follow-up surveys conducted in 2004 and 2006. The ELS is well-suited for this research question because it permits detailed analysis of students' academic experiences by providing high school transcript information for 91 percent of the student sample. Another benefit is that, as with the SASS data, we are able to match schools in the ELS data to their corresponding districts in the SDDS data, and thus can attach a Latino destination type indicator to each school.

Our ELS sample comprises students in the 10th-grade cohort who attend public schools ($N = 12,620$ students nested in 580 high schools). We exclude any students who did not participate in the transcript component because our dependent variable is derived from the transcript study ($N = 1,150$ students) and any students whose report of highest math course taken in high school was missing ($N = 40$ students). As with the SASS sample, we further limit our sample to students in schools with at least one Latino student, thereby eliminating an additional 2,390 students. We then exclude any students in schools whose districts are not represented in the merged 1990-2000 SDDS dataset ($N = 1,400$ students), bringing our final sample size to 7,640 students nested within 370 schools.

College-preparatory math course taking, defined as completion of Algebra II or above, serves as the dependent variable. Algebra II is a well-established cutoff point for college-preparatory math courses because it is highly predictive of college-going (Adelman 1999). Courses above the Algebra II level include Advanced Math (Algebra III or Statistics), Pre-Calculus and Calculus. We take this measure from students' transcript report of the highest-level math course taken by the end of high school and code students who completed Algebra II or above as 1 and all others as 0.

Our primary independent variable is Latino destination type, which indicates whether the school is located in a new, established or other Latino destination district. The other key independent variable is students' race/ethnicity. We interact the Latino ethnicity variable with the Latino destination type variable, creating a cross-level interaction term that allows us to test if the relative odds of Latino students taking college-preparatory math courses vary by destination type.

We also include student- and school-level control variables. We first control for students' demographic characteristics including sex, generational status, native language, family structure and family SES, which is an NCES-constructed variable that is based on parent education and total family income and is divided into quartiles. We then introduce academic controls for students' postsecondary educational expectations and for prior academic achievement in the form of base-year math and reading standardized test scores and 9th-grade math grade point average (GPA) measured on a 12-point scale. Finally, we control for school-level characteristics including school urbanicity and the percentages of students who are a racial/ethnic minority, students who are Latino and students who qualify for free or reduced-cost lunch.

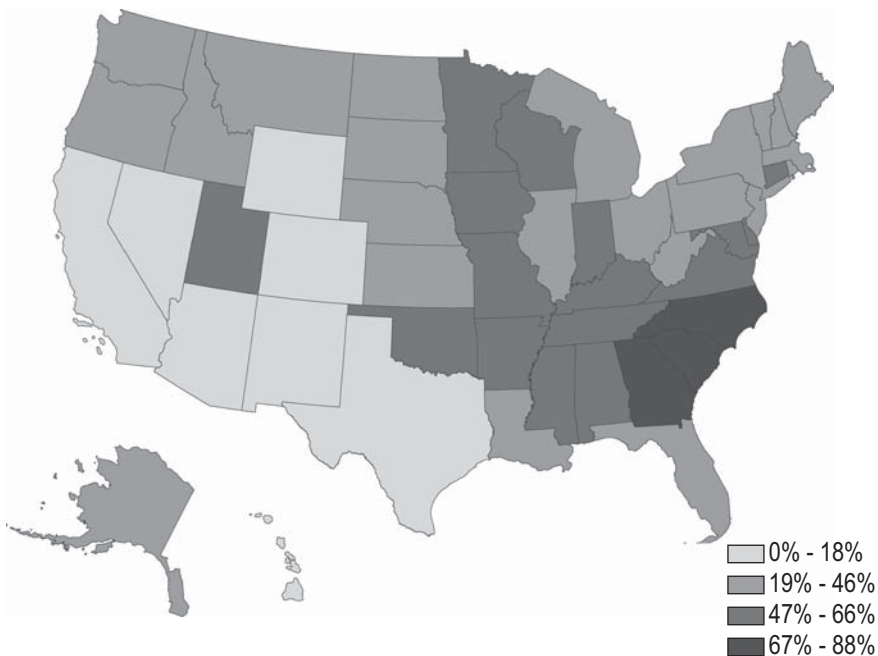
To account for the fact that students in our sample are clustered within schools, we employ multilevel modeling to examine the variation in the Latino-white gap in college-preparatory math course taking by destination type. Because

our outcome variable is binary, we use a hierarchical generalized linear model (HGLM), a derivative of hierarchical linear models that uses an identity link function. We begin with a baseline unconditional model (not shown) with no predictors to determine whether college-preparatory math course taking varies significantly across schools. After confirming significant variation across schools, we proceed with the following modeling sequence: Model 1 introduces the level-1 student demographic characteristics, prior academic achievement and postsecondary educational expectations. Model 2 adds the level-2, school-level predictors. Model 3, the final model, includes all level-1 and level-2 variables and the cross-level interaction term for Latino by destination type, which indicates whether the relative odds of Latino and white students taking college-preparatory math courses vary significantly by destination type. We impute missing level-1 data using mean and modal substitution. We grand-mean center all independent variables and weight all models using the cross-sectional transcript weight, which accounts for probability of selection into the transcript study and for survey non-response (Bozick et al. 2006). We present results in the form of odds ratios and interpret the cross-level interaction term in the form of predicted probabilities.

Results

Figure 1 displays the geographic distribution of new Latino destination districts. As the map shows, the Southeastern and Midwestern regions of the country

Figure 1. Percentage of New Latino Destination School Districts by State



Data source: 1990 and 2000 U.S. Census, NCES School District Demographic System.

contain the largest concentrations of new Latino districts. The rapid growth in the Latino student population is most evident in North Carolina, South Carolina and Georgia, where more than two thirds of the school districts in those states are new Latino districts. In contrast, Texas, Arizona, New Mexico and California are among the states with the smallest percentage of new Latino districts because most of the districts in those states are established Latino districts.

Schools in New and Established Latino Destinations: Evidence From SASS 1999-2000

Table 1 presents the results of our analysis that uses the SASS data to compare characteristics of public high schools and teachers in new and established Latino destinations. We show the weighted means and proportions for all variables by destination type. We call attention first to the compositional attributes of schools. Our findings show that schools in new and established Latino destinations differ in terms of their location, racial and ethnic composition and SES. Schools in new destinations are significantly more likely than schools in established destinations to be located in rural or small town areas, whereas schools in established destinations are more likely than schools in new destinations to be located in urban settings. On average, schools in new destinations have significantly lower percentages of minority students, LEP students and students eligible for free or reduced-cost lunch enrolled.

The lower average percentage of students eligible for free lunch indicates that schools in new destinations are more affluent than schools in established destinations, which in turn suggests that they may offer better resources and educational opportunities. We find some evidence of this in the quality of education indicators. For example, schools in new destinations significantly outrank schools in established destinations on high school graduation and 4-year college enrollment rates. Schools in new destinations have an average of 91 percent of seniors graduating from high school, compared to an average of only 86 percent in established destinations. An average of 40 percent of graduating seniors in schools in new destinations enrolled in a 4-year college, whereas an average of only 33 percent of graduating seniors from schools in established destinations enrolled in a 4-year college. Although teachers in schools in new and established destinations look similar to each other with regard to age, teaching experience and educational background, a slightly higher proportion of teachers in schools in new destinations is certified in their main subject area.

Furthermore, on average, teachers in schools in new destinations also report a lesser degree of school problems. Of particular interest is the finding that teachers in schools in new destinations perceive lack of parental involvement to be less of a problem than do teachers in schools in established destinations, which is surprising given that previous studies (Donato and Marschall 2010; Kandel and Parrado 2006) have highlighted parental involvement as a concern in schools in new destinations. However, this measure does not distinguish parental involvement by race, ethnicity or nativity. Thus, we are unable to assess whether the

Table 1: Descriptive Statistics for Sample of Public High Schools and Teachers by Destination Type

Latino Destination District Type	New		Established		Other	
	710 schools		1,200 schools		390 schools	
Demographic and Compositional Attributes ¹						
Urbanicity						
Urban ^{a, b, c}	.10		.33		.18	
Suburban ^{b, c}	.45		.44		.56	
Small town/rural ^{a, b}	.45		.24		.26	
Mean percentage of Latino students enrolled ^{a, c}	2.77	(4.95)	23.20	(25.37)	1.42	(1.94)
Mean percentage of minority students enrolled ^{a, c}	19.73	(23.16)	44.53	(31.78)	23.34	(27.26)
Mean percentage of LEP students enrolled ^{a, c}	1.39	(5.98)	5.50	(10.78)	.61	(2.98)
Mean percentage of students eligible for free lunch ^{a, c}	26.75	(23.59)	40.90	(30.18)	26.86	(25.63)
Quality of Education Indicators						
Over-crowding						
Any teaching vacancies ^{a, c}	.92		.85		.94	
Student-teacher ratio	15.83	(7.37)	15.74	(7.12)	15.90	(5.61)
Over-enrollment	.12		.15		.13	
Graduation and college-going rates ²						
Percent of 12 graders who graduated this year ^a	90.94	(18.23)	85.65	(24.00)	88.21	(22.88)
Percent of graduates who enrolled in 4-year college ^{a, c}	40.38	(22.59)	33.77	(25.33)	41.22	(23.26)
Percent of graduates who enrolled in 2-year college ^{a, c}	20.48	(15.21)	24.16	(18.03)	18.86	(13.57)
Percent of graduates who enrolled in tech school	8.70	(8.88)	8.74	(11.55)	8.51	(8.68)
Teacher background characteristics ³						
Teacher's age ^{a, b}	42.18	(10.59)	43.08	(10.76)	42.82	(10.74)
Years teaching in public schools ^c	14.42	(10.37)	14.10	(10.38)	15.01	(10.69)
Has bachelor's degree	.99		.99		.99	
Has master's degree ^{b, c}	.51		.50		.56	
Certified in main field ^{a, c}	.96		.94		.97	
Teachers' perceptions of school problems (1 = not a problem, 4 = serious problem)						
Parental involvement ^{a, b, c}	2.73	(.93)	2.94	(.94)	2.81	(.93)
Students unprepared to learn ^{a, c}	2.95	(.85)	3.10	(.87)	2.96	(.85)

Continued

Table 1 continued

Latino Destination District Type	New		Established		Other	
	710 schools		1,200 schools		390 schools	
Student absenteeism ^{a, b, c}	2.76	(.82)	3.00	(.86)	2.82	(.85)
Drop out ^{b, c}	2.31	(.82)	2.52	(.92)	2.31	(.84)
Poverty ^c	2.29	(.88)	2.59	(.97)	2.23	(.93)
Poor student health ^{a, c}	1.87	(.71)	2.05	(.81)	1.90	(.74)
Linguistic Support Services						
Methods used to identify LEP students ⁴						
Information provided by parent	.91		.92		.92	
Teacher observation or referral ^c	.88		.86		.93	
Home language survey ^{a, c}	.63		.81		.59	
Student interview	.90		.87		.90	
Student records	.93		.95		.94	
Achievement tests ^{a, c}	.51		.61		.48	
Language proficiency tests ^{a, c}	.67		.84		.63	
Number of methods used ^{a, c}	5.44	(1.47)	5.85	(1.40)	5.37	(1.39)
Number of services offered for LEP parents (0-3) ^{a, b, c}	1.77	(1.06)	2.37	(.87)	1.42	(1.12)
Specific LEP instruction offered ^{a, c}	.84		.92		.79	
Type of LEP instruction offered ⁵						
ESL/bilingual/structured immersion	.94		.95		.91	
Native language maintenance instruction ^{a, c}	.28		.40		.23	
Instruction in regular English classroom	.89		.91		.90	
Language of subject matter courses for LEP students						
Native language ^{a, b, c}	.08		.18		.03	
English	.93		.91		.95	
Both languages ^{a, c}	.74		.80		.70	
Additional methods of LEP instruction						
Remedial/compensatory classes	.60		.61		.68	
Special education ^{a, c}	.28		.38		.26	
Regular classes	.94		.97		.98	
Any ESL teaching vacancies ^{b, c}	.38		.46		.25	
Teachers with training in LEP instruction ^{a, c}	.09		.28		.09	

Note: ^a Difference between schools in new and established Latino districts significant at $p < .05$ level

^b Difference between schools in new and other Latino districts significant at $p < .05$ level

^c Difference between schools in established and other Latino districts significant at $p < .05$ level

¹ $N = 2,300$ schools

² $N = 2,270$ schools with 12th grade students enrolled

³ $N = 14,210$ teachers

⁴ $N = 1,480$ schools with any LEP students enrolled

⁵ $N = 1,310$ schools offering specific LEP instruction

Means or proportions shown, with standard deviations in parentheses for continuous variables. Data are weighted. Per NCES restricted-use data guidelines, unweighted frequencies are rounded to the nearest 10.

Source: SASS 1999-2000.

involvement of Latino parents is perceived as more problematic in schools in new destinations. Nevertheless, this indicator, along with teachers' perceptions of other school problems, provides insight into general school climate in new and established Latino destinations.

Despite ranking higher on important quality of education indicators, schools in new destinations appear to be under greater staffing strain than schools in established destinations. Although our results do not reveal any significant difference by destination type in overenrollment rates or student-teacher ratios, we do find higher rates of teacher vacancies in schools in new destinations. Nearly 92 percent of schools in new destinations reported having one or more teacher vacancies, compared to only 85 percent of schools in established destinations. This suggests that staffing represents one area in which schools in new destinations are struggling to keep up with the growth in their student population.

Schools in new destinations also lag behind schools in established destinations in the development of their linguistic support infrastructure. Differences by destination type exist in both the methods used to identify LEP students and the services offered to LEP students. For example, schools in new destinations rely most heavily on observational and referral methods – such as teacher observations, parent information, student interviews and student records – to identify LEP students. Although schools in established destinations also rely on observational and referral methods in similar numbers, they are significantly more likely than schools in new destinations to supplement those methods with systematic diagnostic evaluations such as language proficiency tests, achievement tests and home language surveys. This suggests that schools in established destinations have a wider range of diagnostic instruments available and may be better equipped to identify students' linguistic needs.

Of schools that report having any LEP-identified students enrolled, 92 percent of schools in established destinations offer specific LEP instruction for these students, compared with only 84 percent of schools in new destinations. There is also some variation by destination type in the type of LEP instruction offered. Of schools that offer specific LEP instruction, schools in new and established

destinations are equally likely to offer ESL/bilingual/structured immersion instruction and/or instruction in the regular English classroom and to teach subject matter courses to LEP students in English. However, a significantly higher proportion of schools in established destinations offers native language maintenance instruction for LEP students and teaches subject matter courses to LEP students in their native language. This is likely the result of having a larger co-ethnic community in established destinations, and thus a bigger pool of teachers with native language fluency.

Filling ESL teaching positions appears to be difficult in schools in new and established destinations alike. In line with findings from the case studies that cite the shortage of ESL teachers as a major problem, our results show that a considerable proportion – more than one third – of schools in new destinations reported having one or more ESL teaching vacancies. However, the shortage of ESL teachers is not unique to schools in new destinations. An even larger percentage – nearly half – of schools in established destinations reported an ESL teaching vacancy. Given that schools in established destinations have higher percentages of LEP students enrolled, the higher ESL teaching vacancy rate in schools in established destinations may reflect greater need in those areas.

Access to College-Preparatory Math Courses in New and Established Latino Destinations: Evidence from ELS 2002

We turn now to the results of our analysis that uses the ELS data to analyze Latino students' exposure to college-preparatory math courses relative to white students in schools in new and established destinations. Table 2 displays the summary statistics by destination type for the sample of students and schools. We find patterns of variation in school characteristics by destination type that are similar to those found in our analysis of schools in the SASS data. Most notably, we see again that schools in new destinations are located mostly in suburban and rural settings and have lower percentages of minority students and low-SES students enrolled. We also note that schools in new destinations have higher rates of college-preparatory math course taking than schools in established destinations.

Table 3 displays the results from the multilevel models predicting enrollment in college-preparatory math courses. The variance component from our unconditional model (not shown) confirmed statistically significant variation in college-preparatory math course taking across schools. Model 1 includes students' demographic characteristics, postsecondary educational expectations, base-year math and reading test scores and 9th-grade math GPA. Model 2 introduces the school-level indicators. Overall, students in schools in new destinations are 64 percent (odds ratio = 1.64) more likely than their counterparts in schools in established destinations to take college-preparatory math courses. This finding is in line with the finding from the SASS analysis about higher college-going rates in schools in new destinations. Together, these findings suggest that, on average, schools in new destinations may be better equipping students for college than are schools in established destinations.

Table 2: Descriptive Statistics for Sample of Students and Schools by Destination Type

Level-1 Variables (N = 7,640 students)	Latino Destination District Type		
	New (N = 1,820 students)	Established (N = 4,870 students)	Other (N = 950 students)
Female	.52	.49	.49
Race/ethnicity			
White	.72	.44	.71
Black	.15	.16	.17
Latino	.06	.29	.05
Asian	.02	.06	.02
Other	.05	.06	.05
Generational status			
First generation	.03	.10	.02
Second generation	.05	.16	.06
Third plus generation	.92	.74	.92
Native English speaker	.94	.77	.95
Family socioeconomic status	.21	.29	.19
Lives in two-parent household	.56	.56	.59
Post-secondary educational expectations			
Expects to obtain less than 4-year college degree	.26	.24	.23
Expects to obtain 4-year college degree	.45	.46	.45
Expects to obtain more than 4-year college degree	.30	.30	.32
Academic achievement			
Base-year math test scores	38.53	36.02	38.19
Base-year reading test scores	30.28	28.33	29.98
9th grade math GPA	6.31	5.97	6.37
Completed Algebra II or above	.72	.67	.68
Level-2 Variables (N = 370 schools)	(N = 80 schools)	(N = 250 schools)	(N = 40 schools)
Urbanicity			
Urban	.15	.43	.25
Suburb	.50	.48	.48
Rural	.35	.09	.27

Continued

Table 2 continued

Level-1 Variables (N = 7,640 students)	Latino Destination District Type		
	New (N = 1,820 students)	Established (N = 4,870 students)	Other (N = 950 students)
Percent of students eligible for free lunch	19.18	27.28	23.86
Percent of Latino students enrolled	6.90	27.29	6.56

Note: Means or proportions shown, with standard deviations in parentheses for continuous variables. Data are weighted. Per NCES restricted-use data guidelines, unweighted frequencies are rounded to the nearest 10.

Source: ELS 2002.

The final model, Model 3, includes all student and school-level variables and the cross-level interaction term for Latino by destination type. The odds ratio for the interaction term (.53) indicates that Latino students in schools in new destinations have lower relative odds of taking college-preparatory math courses compared to white students than do their counterparts in schools in established destinations, even after accounting for differences in demographic characteristics, prior academic achievement and school characteristics. In other words, Latino students in schools in new destinations do not take as advanced math courses as their white peers.

We depict this relationship graphically in the form of predicted probabilities in Figure 2. We see that there is a Latino-white gap in the probability of taking college-preparatory math courses in schools in new destinations, but not in schools in established destinations. Latino students in schools in new destinations have a .46 probability of taking college-preparatory math courses, whereas white students in those schools have a probability of .58. In contrast, in schools in established destinations, there is no significant difference between Latino and white students' probabilities of taking college-preparatory math courses. Although overall advanced math course taking is greater in schools in new destinations, Latino students do not reap the same college-preparatory benefits from these schools as do their white counterparts; on average, their college course preparation in math matches what they would receive in schools in established destinations.

Discussion and Conclusion

This study provided a national comparative portrait of schools and access to learning opportunities in new and established Latino destinations. We extended previous work on education in new Latino destinations by highlighting important substantive differences in school contexts in new and established Latino destinations. We found support for all three of our hypotheses. First, we found that, on average, schools in new destinations display more favorable educational

Table 3: Odds Ratios from Multilevel Logistic Regression Models Predicting College-Preparatory Math Course Taking

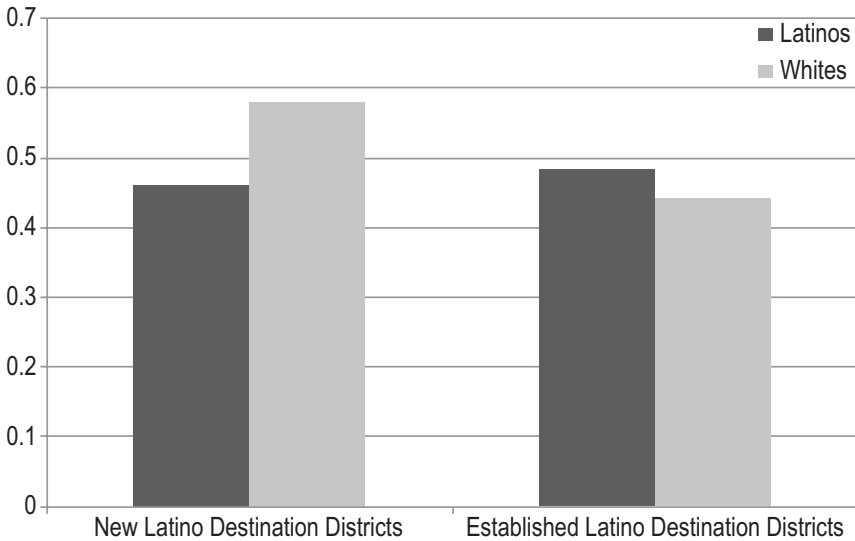
	Model 1	Model 2	Model 3
School-level Variables			
District type (ref = Established district)			
New district		1.64* (.21)	1.52 ~ (.21)
Other district		1.07 (.27)	1.16 (.29)
Urbanicity (ref = Urban)			
Suburban		.89 (.17)	.89 (.17)
Rural		.85 (.23)	.85 (.23)
Percent minority students		1.02*** (.00)	1.02*** (.00)
Percent Latino students enrolled		.99 ~ (.00)	.99 ~ (.00)
Percent of students eligible for free lunch		.99 (.00)	.99 (.00)
Cross-level Interaction Terms			
Latino* New district			.53* (.30)
Latino* Other district			1.92 (.43)
Student-level Variables			
Female	1.43*** (.07)	1.43*** (.07)	1.42*** (.07)
Race/ethnicity (ref = White)			
Black	1.76*** (.11)	1.48*** (.12)	1.48*** (.12)
Latino	1.26 ~ (.12)	1.14 (.13)	1.10 (.13)
Asian	2.00*** (.16)	1.77*** (.16)	1.75*** (.17)
Other race	1.07 (.15)	.98 (.15)	.98 (.15)
Generational status (ref = Third-plus generation)			

Table 3 continued

	Model 1	Model 2	Model 3
First generation	1.40* (.15)	1.38* (.15)	1.41* (.15)
Second generation	1.02 (.12)	1.01 (.12)	1.02 (.12)
Native English speaker	.89 (.12)	.92 (.12)	.91 (.13)
Two parent household	1.25** (.08)	1.26** (.08)	1.26** (.08)
Family socioeconomic status (ref = 2nd quartile)			
1st quartile	.82* (.09)	.81* (.09)	.81* (.09)
3rd quartile	1.29* (.11)	1.30* (.11)	1.30* (.11)
4th quartile	1.52*** (.12)	1.53*** (.12)	1.53*** (.12)
Post-secondary expectations (ref = Obtain 4-year college degree)			
Obtain less than 4-year college degree	.35*** (.09)	.35*** (.09)	.35*** (.09)
Obtain more than 4-year college degree	1.19 (.11)	1.19 (.12)	1.19 (.12)
Prior academic achievement			
Base-year math test scores	1.09*** (.01)	1.09*** (.01)	1.09*** (.01)
Base-year reading test scores	1.04*** (.01)	1.04*** (.01)	1.04*** (.01)
9th grade math GPA	1.19*** (.01)	1.19*** (.01)	1.20*** (.01)
School-level Variance Component	1.33***	1.13***	1.13***

Note: * p < .05 **p < .01 ***p < .001
N = 7,640 cases in level 1; 370 cases in level 2; ~p < .10. Standard errors in parentheses. Data are weighted. Per NCES restricted-use data guidelines, unweighted frequencies are rounded to the nearest 10.
Source: ELS 2002.

Figure 2. Predicted Probability of College-preparatory Math Course Taking for Latino and White Students by Destination Type



Source: ELS 2002.

contexts than schools in established destinations as evidenced by their lower percentage of low-SES students, lesser degree of perceived school problems such as poor student health and poverty and higher rates of college-preparatory math course taking, high school graduation and 4-year college enrollment. They also have lower proportions of minority students enrolled, which may be meaningful for educational outcomes.

Second, we showed that despite having better overall resources, schools in new destinations may be less equipped to keep up with the staffing demands and linguistic needs that have accompanied Latino population growth in their communities. Last, we found that despite evidence of more favorable educational contexts in schools in new destinations, Latino students in schools in new destinations are more stratified relative to white students than are their counterparts in schools in established destinations, as indicated by the Latino-white gap in college-preparatory math course taking in schools in new destinations. This finding echoes that of case studies that document the disproportionate placement of Latino students in new destinations in lower level courses (Wainer 2006).

Our results reveal a complex picture of educational contexts in new and established destinations. The finding that schools in new destinations have higher levels of SES, higher graduation and college-going rates and lower perceived problems than schools in established destinations is promising for Latino students in new destinations. According to those indicators, schools in new destinations appear stronger than schools in established destinations. However, in terms of advanced math course taking, Latino students in schools in new destinations appear to fare about the same as Latino students in schools in established destinations;

despite higher overall odds of advanced math course taking in schools in new destinations, Latino students in schools in new and established destinations have similar probabilities of taking advanced math courses. Nevertheless, Latino students in schools in new destinations may still fare better than their counterparts in established destinations if the quality of advanced math courses is stronger in schools in new destinations.

Though we do not include such measures in this study, the curricular content of math courses within the same track and the achievement of students enrolled in math courses in the same track may vary across school contexts (Riegle-Crumb and Grodsky 2010; Schiller et al. 2010). Given the higher graduation and college-going rates in schools in new destinations, it is reasonable to expect that the quality of math courses may indeed be better in schools in new destinations. However, this optimistic outlook is tempered by evidence of a Latino-white gap in college-preparatory math course taking in schools in new destinations, which suggests that Latino students in those schools are more disadvantaged relative to white students than are their Latino counterparts in schools in established destinations and that exposure to better schools does not necessarily guarantee equal access to learning opportunities.

Our findings pose new questions about what mechanisms contribute to greater stratification in schools in new destinations. We can only speculate about mechanisms because our analysis does not address them directly. One possible explanation may be related to variation in parental involvement. Results from the SASS analysis showed that teachers in schools in new destinations perceive overall parental involvement to be less of a problem than do teachers in schools in established destinations. However, results from qualitative studies have identified the involvement of Latino parents in new destinations as a concern. The higher parental involvement in schools in new destinations may be due to greater involvement by white parents, who may be advocating more strongly for their children to be placed in advanced courses, thereby giving white students an advantage over their Latino peers.

Linguistic support infrastructures in schools in new destinations may also provide some explanation. Results from the SASS analysis indicated that schools in new destinations rely on fewer and less systematic diagnostic instruments to identify LEP students. As a result, schools in new destinations may be more likely than schools in established destinations to conflate lack of English proficiency with academic ability, and thus misassign LEP Latino students to lower level math courses. Another explanation may be that Latino students, as relative newcomers in new destinations, face greater prejudice or lack of understanding from educators who may be unfamiliar with their academic, social and linguistic needs, and thus are less able to engage them in the classroom.

Although our study provides needed insight into educational contexts in new Latino destinations, it is subject to some limitations. First, we recognize that it would be ideal to use a single dataset that contains all student and school-level measures of interest for this analysis. Second, because our analysis is limited to schools in districts that existed in both 1990 and 2000, we may be providing an underestimate of new Latino destinations if areas with rapid Latino population

growth in the 1990s were particularly susceptible to school district boundary changes because of the changes in their student population. Third, by limiting our SASS sample to schools that serve, at minimum, grades 10-12, we may be excluding schools where Latinos have already dropped out in large numbers – an important consideration given the higher rates of early high school attrition among Latino students compared to students from other racial/ethnic groups (Aud et al. 2011). Fourth, our analysis of linguistic support services does not take state and district-level variation in bureaucratic structures into account. Because the provision of linguistic support services depends largely on state and district mandates, the results from this part of the analysis may be more reflective of differences in state or district-level bureaucracies rather than school differences in responses to Latino population growth. Fifth, our analysis of advanced math course taking does not differentiate Latinos by national origin group, which may be masking variation in course-taking patterns. Finally, although we include controls for students' demographic and academic backgrounds in our analysis of advanced math course taking, it is possible that students' selection into new destinations has affected our estimates.

The findings and limitations from our study reinforce the need to further examine how school and place-level characteristics shape the educational integration of Latino youth and point to new directions for future research. Given that our study finds differences in school contexts and that previous studies (Fischer 2010; Stamps and Bohon 2006) have found differences in educational outcomes, future research should assess the extent to which differences in school context account for variation in student achievement and attainment outcomes by destination type. It may also be worthwhile to analyze additional school characteristics – such as teachers' expectations and perceptions of Latino students – that offer insight into opportunities to learn and into discrimination toward Latino students in new and established destinations. In addition, future research should consider differences in elementary and middle school contexts in new and established destinations. As the growth and geographic diversification of the Latino population continue to increase so too does the need for additional studies of the education of Latino youth in new destinations.

Notes

1. To test the robustness of our findings, we estimated all analyses using alternate cut-off points for the district classifications and observed results consistent with those presented.
2. Although we present the results for schools in the “other” destinations category, we limit our discussion to schools in new and established destinations only because they are the primary focus of this study.
3. The sample is not necessarily representative of schools in particular areas of the nation, such as new destinations. However, we compared the proportion of Latino public high school students enrolled in new destinations in the 1990-2000 SDDS dataset with the proportion enrolled in schools in new destinations in the SASS sample and found the distributions to be nearly identical.

4. Per NCES restricted-use data guidelines, we round all unweighted frequencies to the nearest 10.

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