The schooling of children of immigrants: Contextual effects on the educational attainment of the second generation

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We supplement earlier published findings on the academic achievement of the immigrant second generation with an analysis of school contextual effects based on the same large data set used by the best-known prior analyses, the Children of Immigrants Longitudinal Study. A hierarchical model of contextual and individual-level effects on academic achievement and school attrition reveals patterns that reproduce those found in national student surveys but also others that are unique to the second generation. Among the latter are the resilient negative effect of length of U.S. residence on achievement across school contexts and the fact that strong effects of national origin on grades are attenuated in schools with high proportions of coethnics. Mexican-origin students display significant disadvantages in achievement and retention that are generally compounded, not alleviated, by the schools that they attend. A theoretical explanation of this pattern is advanced, and its practical implications are discussed.

The rapid growth of immigration during the past three decades has transformed the demographic structure of the United States and the nature of its interethnic relations. During the past intercensal period, immigration accounted for >70% of the growth of the American population; the foreign-born population reached 30 million, approaching the historic record of 15% of the total population attained in the 1920s. By 1997, a remarkable 62% of the population of Los Angeles was of immigrant stock (first or second generation) as were 54% of New York's, 43% of San Diego's, and 72% of Miami's population (1, 2).

Although the initial attention of scholars and policy makers focused on the immigrants themselves, it has become clear over time that the long-term consequences of today's immigrant wave are more closely linked with the second generation and its chances for successful adaptation. Immigrant children and U.S.-born children of immigrants are the fastest growing segment of the nation's population under 18 years of age. By 2000, they approached 15 million or 1 in 5 of all young Americans (3, 4).

Unlike first-generation immigrants whose concerns and aspirations are commonly centered in their country of origin and who frequently return there, the second generation is composed of U.S. citizens and most of its members are here to stay (5, 6). Most of this population is still young and the majority are still in school (4, 7). Hence, the principal outcomes of the adaptation process at this stage are educational: academic attainment and the likelihood of graduating vs. dropping out of high school. In this article, we examine the effects of the class and ethnic composition of the schools that second-generation youths attend in early adolescence on these key outcomes.

Using data from the Children of Immigrants Longitudinal Study (CILS), the most extensive data source on the immigrant second generation to date, Portes and Rumbaut (8) analyzed the educational adaptation process of this population. Results were published in a series of articles and in a recent book, *Legacies: The Story of the Immigrant Second Generation*. The main findings from their analysis will be summarized below. However, potential effects of school contextual variables on academic achievement and school retention were not examined exhaustively. The purpose of the present article is to extend and supplement these prior results by applying more advanced and appropriate statistical methods to the CILS data set. The longitudinal character of the study makes it possible to examine how school compositional factors at an early age can bear on subsequent academic achievement and on the likelihood of second-generation youths remaining in school until graduation. Specifically, we inquire about the effects of the class and ethnic composition of schools attended in early adolescence on the probability of graduation and on level of educational attainment.

Theoretical Background

At least since the famous Coleman Report, the preoccupation has continued among education scholars with the ways in which school context affects the academic performance of children, both directly and in interaction with individual predictors (9–12, §). The abundant literature about this topic has paid particular attention to the differential performance of students in Catholic and other private schools, as contrasted with those in lay public schools (10, 13–15).

Educational researchers have identified school composition as one of the key areas responsible for schools' differences in overall academic success and rates of dropout (16). School compositional effects constitute the aggregate influence of school peers on a student's school experience, above and beyond the effects of the individual student's own particular peers (17–19). When schools are segregated by their socioeconomic status (SES), they differ in many ways, including teacher quality, staffing ratios, school climate, and teachers' expectations (20). Previous research has found a school's mean SES to have a contextual effect on students' achievement and dropout rates, over and above the effects of individual students' background characteristics (20–25).

Many minority schools are of low SES, which is a major reason why minority schools are associated with low achievement. However, recent studies show an influence of ethnic segregation on academic achievement *independent* of the school's SES (26). And, despite >20 years of desegregation efforts, U.S. public schools have increasingly resegregated (27). School segregation is most pronounced in large metropolitan areas where immigrants are concentrated. During the period from 1989 to 1995, the between-district segregation in metropolitan areas steadily increased (28). School segregation among Hispanics has become substantially

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more pronounced than among other minority groups, including Black Americans, and Hispanic school segregation grew substantially faster than that of other minority groups (29). Few studies so far have focused, however, on the long-term consequences that early class and ethnic composition of schools can have on subsequent educational outcomes.

The sociology of immigration and, in particular, the study of the second generation, has made several significant empirical contributions, indicating that the growing population of children of immigrants is similar to the general student population in some respects, but it also differs in systematic ways. These analyses, including those performed on the basis of CILS data, show positive effects of family status, student ambition, self-esteem, and gender (female) on achievement. They also point to the very strong effect of intact families on school retention and significant positive influences of coethnic friendships and fluent bilingualism on academic attainment (30–35). In addition, resilient ethnic effects associated with students' national origins persist after controlling for all individual and family variables. These effects have been interpreted as supporting the enduring influence of coethnic communities and the intergenerational transmission of advantage and disadvantage associated with the modes of incorporation of different immigrant groups (30, 36, 37).

We hypothesize that the socioeconomic and ethnic composition of schools attended early in life can have enduring consequences on chances for educational success of immigrant children. Based on the existing research literature, we predict that the average SES of schools attended in early adolescence will be positively associated with educational performance and negatively associated with dropping out among second-generation youths (10, 11). On the other hand, the ethnic composition of schools can play an equally enduring but different role. Although family and school SES reinforce each other's effects, attending schools populated mostly by coethnics may attenuate individual nationality effects. Several recent studies suggest that children from underprivileged backgrounds may feel at less of a disadvantage in the company of their peers, and they would perform worse than expected in the competitive environment of majority white middle-class schools[¶][‖] (38–40).

By the same reasoning, children from advantaged immigrant nationalities who attend schools with a large number of similar coethnics may see their academic gains attenuated by the more competitive environment of such schools and the diminished sense that they are, in some sense, "special" (41, 42). Although tentative at this point, these ideas will serve as guide points for the exploration of a question not analyzed before, namely, how early school ethnic composition bears on the subsequent academic fate of the new second generation.

Data and Prior Results

CILS is a survey of 5,266 children of immigrants who were originally interviewed during school year 1992–1993 in the school systems of Miami (Dade County) and Ft. Lauderdale (Broward County) in Florida and San Diego in California. The sample was limited to eighth and ninth graders to control for the well known censoring bias created by school dropouts in later grades. The ninth- to twelfth-grade dropout rate in Dade County (Miami) and San Diego schools at the time of the CILS surveys exceeded 15%. Among minority students, the dropout rates went as high as 25% (see ref. 8, p. 259).] Second-generation students were defined, in agreement with common usage in the immigration literature, as native-born children with at least one foreign-born parent or foreign-born children who were brought to the United States at an early age and have resided in the United States ever since.

The sample design was based on a selection of schools in each area that represented different socioeconomic levels, ethnic compositions, and geographic locations. In total, 42 schools in the three metropolitan areas took part in the study. In all, 77 different nationalities are represented in the study. Miami/Ft. Lauderdale and San Diego were selected because of the different compositions of their immigrant populations. South Florida is home to large concentrations of people from the Caribbean and South America, including Cubans, Nicaraguans, Haitians, West Indians, and Colombians. Southern California, in turn, has large concentrations of Mexicans, Central Americans, Vietnamese, Cambodians, and East Asians.

Three years after the original survey and at the time when most respondents were in their senior year of high school, a follow-up was conducted. Its purpose was to examine the evolution of key adaptation outcomes during adolescence. Survey data were supplemented by data provided by school systems on school inactivity and senior high school grades. These records are the data used as dependent variables in the following analysis.

The follow-up survey retrieved 82% of the original sample. Sampling bias analysis, reported in earlier publications, indicates that the second survey is representative, in almost every respect, of the original sample (8). In addition, however, data on school attrition and academic grades were provided by the schools themselves and are available for most original respondents, including those not re-interviewed in the follow-up. Therefore, the data allow us to examine the effects of individual, family, and school predictors, measured during early adolescence, on academic outcomes 3 years later.

Several prior studies have analyzed different aspects of educational attainment in this sample. These studies have relied on standard models of status attainment in sociology and economics that highlight the significance of parental SES, family composition, aspirations, and gender on student's academic performance[§] (43–45). In the only multilevel study of contextual effects on the performance of the second generation published so far, Portes and MacLeod (38) found that children from relatively advantaged ethnic communities, such as Cubans in Miami and the Vietnamese in San Diego, performed well academically, regardless of the composition of the schools that they attended. In contrast, disadvantaged students, such as Mexican Americans in California and Haitian Americans in Florida, performed differently depending on school context. In agreement with results based on prior national samples, this study found that family and school SES supported each other so that the academic advantage of children from high-status families was compounded in high-status schools.

Results published in *Legacies* (8) focused on academic outcomes by the senior year of high school. The analysis found that, in addition to the positive effects of family SES and intact families on grade point averages (GPAs), early educational aspirations and self-esteem also yielded strong positive effects. In contrast, length of U.S. residence *reduced* grades in late adolescence, pointing to a declining achievement drive among more assimilated second-generation youths.

The same analysis modeled determinants of school attrition. Living in an intact family (both parents present) proved a paramount factor in keeping children in school; early educational expectations and self-esteem also prevented second-generation youths from dropping out. Most ethnic effects disappeared after controlling for individual and family variables, with one important exception: Mexican-origin children continued to have a significantly higher probability of abandoning school prematurely. We inquire in the following analysis on how these results are affected by contextual characteristics that have not been examined in prior analyses.

Table 1. Level I regressions of senior grades and school inactivity on individual and family predictors

Predictors[†]	Senior GPA[‡]		Dropout[§]		Inactive[§]	
	Coefficient[¶]	T ratio	Coefficient[‖]	Z ratio	Coefficient	Z ratio
Region (California)	0.615	21.33***	−0.739	−4.50***	0.307	2.92**
Age	−0.040	−2.04*	0.140	1.98*	0.287	5.61***
Sex (female)	0.297	12.33***	0.040	0.33	−0.016	−0.19
Length of U.S. residence						
10 years or more	0.016	0.53	0.112	0.76	0.008	0.08
9 years or fewer	0.105	3.51**	0.091	0.60	0.194	1.82
Family SES	0.171	9.51***	−0.041	−0.46	−0.020	−0.31
Intact family	0.178	7.03***	−0.647	−5.35***	−0.721	−8.17***
Educational expectations	0.187	11.74***	−0.309	−4.55***	−0.199	3.82***
Self-esteem	0.251	10.56***	−0.376	−3.36**	−0.042	−0.49
National origin						
Chinese/Korean	0.755	8.42***	−0.278	−0.46	−0.447	−1.16
Mexican	−0.325	−7.97***	0.572	2.78*	0.257	1.94*
Vietnamese	0.322	6.38***	0.221	0.81	−0.182	−1.02
Constant	0.804	3.45	−1.314	−1.18	−4.580	−5.54
R^2	0.240					
LR Ch2(24)[††]			0.274			
N	4,900		4,654			

*, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.

[†]All predictors were measured in the first CILS survey, 1992–1993. See Table 6, which is published as supporting information on the PNAS web site, for measurement details.

[‡]GPAs reported by school systems at the time of the second CILS survey, 1995–1996.

[§]School status reported by school systems at the time of the second CILS survey, 1995–1996.

[¶]Unstandardized ordinary least-squares coefficients indicating net effects on GPA per unit change in each predictor.

[‖]Multinomial logistic coefficient indicating net change in the log-odds of dropping out or becoming inactive.

[††]Likelihood ratio χ^2 (24 df).

Results

Table 1 presents results of an individual-level ordinary least-squares regression of GPAs in senior high school and of a multinomial logistic regression of the probabilities of dropping out or being declared inactive by the school system. The model includes predictors derived from the previous theoretical review *and* found to have statistically significant effects in all previous analyses. Because our purpose is to examine possible interaction effects between school contextual factors and individual-level predictors of educational attainment, it is appropriate to limit the level I models to predictors found to have statistically reliable effects. Results in Table 1 provide a baseline for our analysis as they replicate those reported by prior studies.

The analysis of national differences is limited to just four nationalities: Chinese, Koreans, Mexicans, and Vietnamese. This decision was based on the prior finding that these are the nationalities that have the strongest and most resilient effects on academic performance and that these effects are of opposite sign: the three Asian groups perform consistently above the sample average and retain significant positive effects after controlling for other predictors; the opposite is the case for Mexican-origin students (8). Chinese and Korean students are combined in this analysis because of their relatively small numbers and because of their close similarity in terms of parental human capital, proportions living in intact families, areas of residence, and levels of academic performance. This reproduces past practice in the analysis of the same data (8).

The reference category for the analysis of national differences is the remainder of the CILS sample comprising 73 different national-origin groups and >3,000 cases. Because Mexican scores and those of the three Asian nationalities balance each other on the dependent variables, the averages for this reference category are very close to those of the total sample. This finding makes this category an appropriate point of comparison, equivalent to contrasting Mexican- and Asian-origin students with the rest of the second generation.

The dependent variables are GPA in senior high school and indicators of dropping out and inactivity reported by the respective school systems. We explicitly control for differences in grading practices across regions by introducing this variable into the model as a predictor. [This predictor is a dummy variable with schools in California (San Diego) coded *1*; those in Florida (Miami/Ft. Lauderdale) are coded *0*.] The rest of results in the table reproduce those reported earlier. They add to our confidence in GPA as a valid indicator of academic performance by showing that it is a well behaved measure that correlates positively and significantly with established predictors of academic attainment: parental SES and intact families have strong positive effects, as do self-esteem and educational expectations. Females display significantly higher achievements, a result that reproduces those reported in national samples (38). As noted earlier, length of U.S. residence tends to have a negative effect on second-generation grades.

The school systems of Miami/Ft. Lauderdale and San Diego provided two indicators of school abandonment, classifying some students as "dropouts" and others as "inactive." The first category includes students who have been officially determined to have left school before graduation and the second includes students whose whereabouts are unknown. (The two categories are mutually exclusive so that dropouts are not counted twice.) Table 1 shows a similar pattern of effects on both indicators. It reproduces prior published results showing the positive effects of intact families and early educational expectations in preventing school abandonment and the negative ones of age and Mexican origin. We inquire next how these results vary with the characteristics of the schools that second-generation youths attended in early adolescence.

Fixed and Random Effects. Table 2 presents results of an ANOVA for random effects where the intercepts and all significant individual effects are modeled as a function of their respective grand means plus an error term. This analysis is necessary to determine whether sufficient between-school variance exists to justify multilevel contextual modeling. The absence of such variance represents a substantive outcome insofar as it indicates that a specific individual or family effect persists, regardless of school context. By having predictors coded as deviations from their school means, the

Table 2. Analysis of variance of random effects on senior high GPA and school abandonment among second-generation students

Random effect	GPA		School dropout		Inactive in school	
	Mean effect[†]	P value for residual variance[‡]	Mean effect[†]	P value for residual variance[§]	Mean effect[†]	P value for residual variance[§]
Intercept	2.45***	0.000	−2.65***	0.001	−1.84***	0.000
Age	−0.06*	0.000	0.22*	0.041	0.24**	n.s.
Sex (female)	0.30***	0.001	0.04	n.s.	−0.09	n.s.
Length of U.S. residence						
10 years or more	0.01	n.s.	0.10	n.s.	−0.05	n.s.
9 years or fewer	0.11**	n.s.	0.05	n.s.	0.19	n.s.
Family SES	0.11***	0.012	0.21	0.043	−0.05	n.s.
Intact family	0.15***	0.011	−0.61***	n.s.	−0.73***	n.s.
Educational expectations	0.19***	0.017	−0.33***	n.s.	−0.21***	n.s.
Self-esteem	0.26***	n.s.	−0.39**	n.s.	−0.07	n.s.
National origin[¶]						
Asian	0.59***	0.001	0.02	n.s.	−0.19	n.s.
Mexican	−0.23**	0.001	0.62*	n.s.	0.40*	n.s.

n.s., not significant. *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.
[†]Average within-school intercept and slopes.
[‡]$n = 41$ schools.
[§]$n = 33$ schools.
[¶]Computed on the subsample of schools with sufficient number of Mexican- or Asian-origin students.

intercepts are equivalent, respectively, to the average within-school GPA and the average log-odds of dropping out or becoming inactive in school.

For this analysis, we combined Vietnamese and Chinese/Korean students into a single category. A good operational reason for this decision exists, namely, the need for a large enough sample to permit reliable estimation of contextual effects. However, there are also substantive facts that make this approach reasonable. The three Asian groups are quite similar in a number of characteristics. These characteristics include the proportion living in intact families, very high for all three groups; the high educational expectations among both parents and children; and the three groups' higher-than-average levels of academic performance. As shown in Table 1, both Chinese/Koreans and Vietnamese retain significant positive ethnic effects on grades after controlling for all other factors, but neither group has a significant net effect on dropping out or becoming inactive in school.

Results presented in Table 2 use robust estimates of standard errors to correct for the two-stage CILS sampling design. Robust standard errors also attenuate the effect of a large sample size, reducing the probability of a type I error. Results for the intercepts show sufficient between-school variance in all dependent variables to justify additional analysis. (To prevent an excessive loss of schools, the analysis of contextual effects on all predictors, except national origin, was performed with the latter kept as fixed effects.) The same is not the case for the slopes. Among predictors of senior high school grades, average effects of length of U.S. residence and self-esteem do not vary significantly across schools. Substantively, this means that, regardless of school context, individual self-esteem is associated with higher academic performance, whereas acculturation (indexed by longer periods of U.S. residence) depresses it. The two ethnic effects, Mexican and Asian, remain highly significant, albeit in opposite directions and both vary sufficiently to justify further analysis.

Among the few significant predictors of dropping out, only the age effect varies across schools. Although total variation in the Mexican effect on dropping out is nonsignificant, it is possible that some unobserved variation still exists. Given the theoretical importance of this coefficient, we will examine this possibility. The absence of sufficient observed and unobserved variation in other significant predictors means that the strong effects of intact families, early educational expectations, and self-esteem in preventing

school abandonment persist across different types of schools. This result is substantively important. Self-esteem emerges from this analysis as one of the strongest predictors of educational outcomes among second-generation youths, having a significant positive influence on grades and a negative one on dropping out, both resilient to school compositional differences. Prior analyses of the same data show that the positive effect of self-esteem on senior high school achievement remains even after controlling for junior grades, a finding that supports the hypotheses of a causal relationship (8).

Growing up in an intact family turns out to be the most important family factor because (unlike family SES) it has strong effects on *both* grades and the probability of high school graduation, with the latter effect invariant across schools of different characteristics. The effects of early educational expectations run in the same direction, reinforcing those of family composition and self-esteem.

Grades. The hierarchical analysis of school contextual effects models the intercepts of individual (level I) regressions and slopes for which significant variance occurs as outcomes of three school characteristics: (*i*) socioeconomic composition, indexed by the obverse of the percentage of students eligible for the federally subsidized lunch program; (*ii*) ethnic composition, indexed by the percentage of students in school who are either Asian or Hispanic; (*iii*) other school characteristics, captured by the contextual (level II) error. The latter is interpretable as the sum of all other (unmeasured) school characteristics affecting each level I outcome. A control for region in the regressions of the between-school intercepts obviates the need to include the same predictor in the regressions of the slopes.

School compositional effects on grades are presented in Table 3. SES of schools significantly improves academic achievement, a result that reproduces the results found in past studies of national samples (11, 14). The figure corresponds to the common-sense notion that schools attended by high-status students tend to be better overall, especially in terms of their academic outputs. (It is also possible that higher-SES schools tend to give higher grades to their students. Although we interpret GPAs in this analysis as a valid overall indicator of academic achievement based on its correlations with earlier test scores and other established predictors, the possibility that its variation between schools reflects, at least partially, different grading practices cannot be discarded.) Turning to the

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Table 3. School contextual effects on level I coefficients of senior high GPA among second-generation students, 1996

Random effects	Level II predictors				Variance explained, %	P value for residual variance
	Intercept	School SES	% Asian	% Hispanic		
Mean GPA[†]	2.441***	0.006***	0.003	−0.001	70.2	0.000
Age slope	−0.056*	−0.001	0.002	−0.001	15.4	0.002
Sex (Female) slope	0.294***	−0.002	0.006*	−0.001	64.7	n.s.
Length of U.S. residence slopes						
10 years or more	0.027	—	—	—	—	—
9 years or fewer[‡]	0.115*	—	—	—	—	—
Family SES slope	0.138***	0.004***	−0.003#	0.000	66.7	n.s.
Intact family slope	0.152***	0.002	−0.003	0.000	10.0	n.s.
Early educational expectations slope	0.188***	0.002**	0.001	0.001	33.3	n.s.
Early self-esteem slope[‡]	0.262***	—	—	—	—	—
Asian-origin slope[§]	0.675***	0.002	−0.015***	—	93.8	n.s.
Mexican-origin slope[§]	−0.284**	0.000	—	0.005#	37.5	0.032

n.s. not significant. #, $P < 0.10$; *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.
[†]Contextual model of the level I intercept includes a control for region (California) which is positive and significant at the 0.001 level.
[‡]Level I slopes not modeled because of insufficient between-school variance.
[§]Computed on the subsample of schools with sufficient number of Asian- and Mexican-origin students.

slopes, we note that no significant contextual influences on age occur, but an important one occurs on gender to the effect that second-generation females perform significantly better than males and they do even better in schools with a higher proportion of Asian students.

The strong influence of family SES background on academic achievement is significantly reinforced in high-status schools, compounding the advantages of children from well-to-do families. This interaction of family and school contexts is identical with that observed in national samples, indicating that immigrant youths are no different from their native-born counterparts in the intergenerational transmission of privilege. However, when high-SES students attend heavily Asian schools, the influence of their family background is partially neutralized. The contextual effect of school Asian composition is significant only at the 0.10 level, but it is of a sufficient order of magnitude to attenuate the mutually reinforcing influences of family and school SES. This effect is similar to the "leveling" influence that Catholic schools have on children of different socioeconomic backgrounds, which has been observed in national student samples (11, 13, 15, 46).

Fig. 1 helps illustrate the changing effects of family status in schools of different socioeconomic levels. It graphically portrays the compounding effects of social class in increasing achievement inequalities. Schools of very-low-average status neutralize the positive influence of parental SES, leading to a slightly downward slope in performance. The positive interaction between family and school

SES is most visible in high-status schools where the advantages brought to school by privileged children truly pay off. (Again, it is possible that the academic advantage of students from high-SES families who attend high-SES schools may partially derive from the tendency of these schools to grade their privileged students more generously. Investigating this possibility would require an in-depth, possibly ethnographic investigation into the grading practices of different types of schools.)

As noted previously, intact families exercise a positive effect on achievement regardless of school context, a result that highlights once again the powerful influence of this variable on second-generation achievement. The effect of early educational expectations does vary, however, with the class composition of schools. As with family and school SES, these effects are mutually reinforcing so that early ambition has a higher academic yield in high-status schools, whereas its positive influence is weakened in poorer ones. This interaction effect is quite similar to that portrayed in Fig. 1. Therefore, two key interactions discovered by this analysis point to the mutually reinforcing influence of high family SES and educational ambition for students whose school peers come from equally privileged backgrounds. This result clearly supports our first hypothesis concerning class compositional effects.

Next, we seek to establish whether the effects of national origin vary with the proportion of coethnics in school. The central finding in Table 3 is that individual ethnic effects, positive for Asians and negative for Mexicans, are *attenuated* in the presence of a sizable percentage of coethnics. Fig. 2 illustrates this pattern for Asian students. The average percentage of Asians in our school sample is
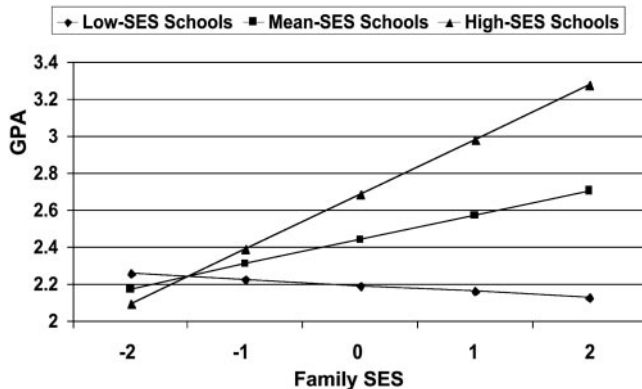

Fig. 1. Effect of family SES on senior grades in schools of different socioeconomic composition.
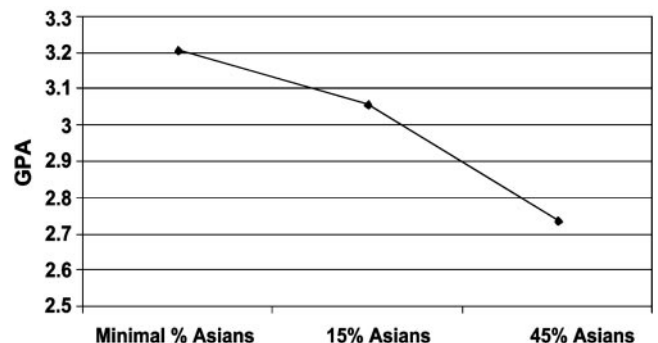

Fig. 2. Asian-origin students' senior average grades in schools with different proportions of Asians.

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Table 4. Effects of school ethnic composition on the math scores of Asian students, 1992

Random effect[†]	Level II predictors[‡]		Variance explained	P value of residual variance
	Intercept	Asian, %		
Mean math score[§]	50.69***	0.34	56.5	0.000
Asian-origin slope	22.26***	−0.40***	93.4	n.s.
Vietnamese slope[¶]	18.33***	−0.25**	88.8	n.s.

n.s., not significant; *, P < 0.05; **, P < 0.01; ***, P < 0.001.

[†]The level I equation from which these results are drawn includes the same predictors listed in Table 3. Contextual effects on all other predictors are omitted.

[‡]The contextual school variables for this analysis are the same as in Table 3. For our purposes, we list only mean school effects (intercepts) and those of percent Asian.

[§]Average percentile score for all schools in the sample in the Stanford standardized math test administered in the eighth grade in 1992.

[¶]These results are based on regressions including the Vietnamese-origin effect. All other predictors listed in Table 3 were included so that these are net effects of Vietnamese origin on the dependent variable.

19%, ranging from 0% to 45%. For schools at the low end of this continuum, the average senior GPA for an Asian-origin student is 3.22, or 30% above the sample average. For Asian students who attended more coethnic schools, the average grade drops to 2.77, still above the grand mean but only by 12%.

In the Mexican students, the negative effect of ethnic origin is also significantly attenuated in schools with higher numbers of Hispanics. This effect reproduces that found by Portes and MacLeod (38) in their analysis of math scores in junior high school. These authors interpreted it as indicating that Mexican students do better in the more congenial and presumably less competitive environment created by coethnic peers.

This line of reasoning corresponds to our second hypothesis concerning the diminished effects of national and class origins in the presence of a significant number of peers from the same ethnic background. This attenuation applies to advantaged and disadvantaged immigrants and is supported by the previously noted effect of Percent Asian in flattening the family SES/GPA slope. To see whether this contextual effect replicates across other indicators of academic achievement, we ran the same analysis with math scores in junior high school as the dependent variable. Portes and MacLeod (38) had already found a reduction of ethnic disadvantage on math scores for Mexican-origin students. We tested whether the same result applies to the significant advantage of Asian-origin youths. In this case, the number of Vietnamese-origin students is sufficiently large to allow us to test this effect for all Asian students and for the Vietnamese alone.

Table 4 presents the findings that indicate again that the significant academic advantages associated with Asian or Vietnamese origin *diminish* in school contexts characterized by a large proportion of other Asian students. Math scores were measured in junior high school at the same time as ethnic composition of schools. (The Stanford standardized math test score was administered to all students in the sample during the eighth grade. These data are used in the analysis presented in Table 4. In senior high school, the test became optional, thereby eliminating its value as an indicator of achievement. This optionality is the reason why earlier analyses focused exclusively on senior GPAs.) But the analysis in Table 3 used GPAs in senior high school as the dependent variable. These results indicate that the contextual effects of ethnic composition, like those of class composition, endure over time: second-generation students who attended higher-SES schools in early adolescence continued to receive higher grades later on; and the handicaps or advantages that they brought from their respective ethnic communities continued to be reduced if their early school contexts were marked by a heavy coethnic presence.

Complementing the explanation advanced by Portes and MacLeod (38) for the reduction of the Mexican disadvantage in mostly Hispanic schools, we interpret results for Asian students in Tables 3 and 4 as indicating that the greater competition in heavily Asian schools and the presence of equally disciplined and motivated peers reduces the relative advantage brought by these students from home. In both cases, however, the reduction of the ethnic effect is relative; although attenuated, it never entirely disappears. Corresponding to our two original hypotheses, the compositional effects of class and ethnicity work at cross-purposes in affecting the educational attainment of the second generation. Although higher school SES supports and reinforces the effects of family SES and educational expectations, coethnicity of schools reduces the strong net influence on attainment associated with different immigrant backgrounds. Both interactions are resilient, enduring over time.

School Abandonment. The two indicators of school abandonment refer, respectively, to students who were officially determined to have left school before graduation and those whose whereabouts were unknown. Despite this difference, the analysis of determinants of both outcomes yields similar results, showing only a few predictors to have reliable effects. These have been described previously. What is new in this analysis is that, as shown in Table 2, most of these effects vary little across school contexts. These include the strong influence of intact families and of early educational expectations and self-esteem.

Extending this analysis, Table 5 presents hierarchical generalized linear models regressions of the intercepts of both indicators of school abandonment and of the age slope for dropping out. Despite limited between-school variance, we also regressed the Mexican-origin individual effect to determine how it is influenced by contextual factors. These coefficients come from a multinomial logit model, and, hence, the intercepts represent the average within-school log-odds of dropping out or being declared inactive

Table 5. School contextual effects on indicators of school abandonment among second-generation students, 1996

Level I coefficient	Mean		Asian, %		Hispanic, %		School SES		Residual variance P value	Variance explained
	Coeff.	P[†]	Coeff.	P[†]	Coeff.	P[†]	Coeff.	P[†]		
Intercept, dropout rate[‡]	2.646***	0.058	−0.001	—	0.001	—	−0.015**	−0.0009	0.000	43.4
Age slope (dropout)	0.191[#]	0.010	0.015	—	0.009[#]	0.0006	−0.004	—	0.105	7.4
Mexican slope (dropout)	0.892**	0.055	—	—	0.008	—	0.023*	0.0015	—	—
Intercept, inactivity rate[‡]	1.849***	0.128	0.008	—	−0.008	—	−0.005	—	0.000	3.8

n.s., nonsignificant effect; Coeff., coefficient; *, P < 0.05; **, P < 0.01; ***, P < 0.001.

[†]Net probabilities are calculated for significant coefficients only. For the intercepts, the figures, $\bar{P}_j$, represents the dropout or inactivity rates in the average school, using $\bar{P}_j = e^{\beta_{0j}}/\Sigma_1^3 e^{\beta_{0k}}$. For slopes, the figures ΔP_j represent the net increase/decrease in the respective effect associated with a unit increase in the contextual predictor, using $\Delta P_j = P_j (\beta_j - \Sigma_1^3 P_k \beta_k)$.

[‡]The contextual regressions of the intercepts includes a control for region. For dropout rates, the associated coefficient is statistically insignificant. For inactivity rates, it is significant at the 0.05 level, indicating a larger average rate in California schools.
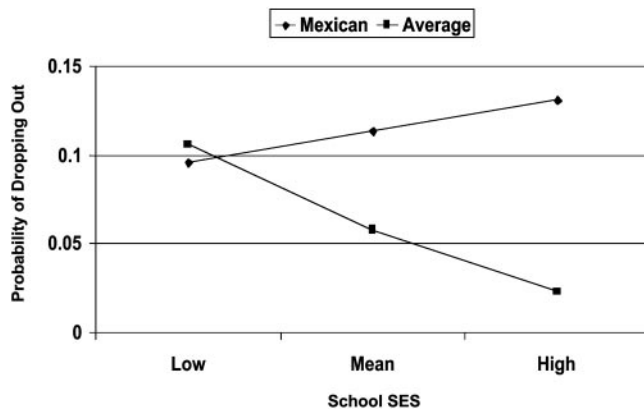
Fig. 3. Effect of school SES on dropping out for Mexican and average students.

relative to those who remained active or graduated. The slopes represent the net effects on these log-odds.

To make results interpretable, we transformed all significant effects into probabilities. Table 5 thus shows that the average probability of dropping out in schools in this sample is 0.058 and that it is not affected by the ethnic composition of schools attended in early adolescence. On the other hand, class composition does play a significant role, reducing the probability by 1% for each 10% increase in the average SES of schools. Note that family SES is not itself a significant predictor of dropping out, so that the inhibiting influence of social class on this variable is exclusively contextual.

Older students are more likely to drop out or be declared inactive. Each additional year of age increases the probability of dropping out by 1.5% in the average school. The hierarchical generalized linear regression model also indicates a tendency for this effect to become steeper in schools with a higher percentage of Hispanic students. Results confirm that Mexican ethnic origin raises the probability of dropping out and that it does so by a significant margin, 5.5%, which almost doubles the sample average. An equally important finding is that this probability *increases* in higher-status schools. In other words, although for the average second-generation student attendance at a high-SES school reduces the chances of dropping out, for Mexican-origin children it raises it. This remarkable effect is portrayed in Fig. 3, which presents the relationship between dropout probabilities and class composition for the entire CILS sample and for its Mexican component.

Although this last effect was not predicted, it is in line with the rationale of our second hypothesis, that is, in higher-SES (and presumably less ethnic) schools the tendency of Mexican-American students to drop out is heightened. This implies a *lower* probability of doing so in lower-SES (and presumably more ethnic) schools. The double contextual effect of class composition (positive for most students, but negative for Mexican Americans) highlights again the deleterious effect of more competitive environments for immigrant students coming from unusually disadvantaged backgrounds. These results support, once again, those reported by Portes and MacLeod in 1996 (38).

Summary

This article has sought to extend our knowledge of the academic achievement of the immigrant second generation by focusing on the long-term effects of class and ethnic composition of schools. We find that many of the individual-level effects reported in the literature are quite stable across different school contexts. Such results include the positive association of self-esteem with GPAs and high school graduation and the strong effects of growing up with both biological parents and of early ambition on both educational outcomes.

Other results reproduce those found in national student samples. These include the significant contextual effect of school SES in improving grades and reducing the probability of dropping out. As found in earlier studies, school-class-composition SES interacts with family SES, compounding the already considerable advantages of students from more privileged backgrounds. Children of immigrants are no different in this respect from the rest of the population.

Results unique to the second generation include the notably invariant effect of length of U.S. residence on achievement and the distinct ways in which the influence of ethnic origins play across schools. Longer periods of U.S. residence *lower* academic performance, and they do so regardless of school context. This result points to the influence of acculturation in bringing down the initial achievement drive among immigrant youths to the level predominant among native-parentage students. The sizable negative correlations between length of U.S. residence and school engagement and hours of homework reported by prior studies lends further support to this conclusion (8).

Children of Chinese, Korean, and Vietnamese immigrants and children of Mexican immigrants display well known and opposite patterns of academic achievement. The present analysis sheds light on what happens when coethnics constitute a large proportion of school peers. We hypothesized a counterintuitive effect of ethnic composition leading to a partial attenuation of individual ethnic effects. The rationale for this hypothesis, drawing from recent literature that points to the inhibiting effects of highly competitive environments on disadvantaged students, is well supported by the results. Thus, once individual ethnic effects on average grades (positive for Asians and negative for Mexicans) are taken into account, the presence of a greater number of coethnic acts primarily as a leveling factor. Our inquiry into whether this leveling effect is restricted to GPA as an indicator of academic achievement shows that it is not; the same result is observable in math scores for both ethnic groups, pointing to the robustness of this effect across nationalities and over time.

Mexican-origin students suffer not only from lower achievement levels, but also from a higher propensity to drop out of school. The new finding in this analysis is that this propensity becomes greater in high-SES schools, contrary to what happens to other students. This result suggests that dropping out represents a "solution" for students who confront more competitive school environments where the handicaps associated with their own backgrounds become highly visible, subjecting them to greater discrimination by others (37, 47, 48). This last finding is, of course, in line with the hypothesis of attenuation of individual ethnic effects in mostly minority (and lower SES) schools.

Conclusions

Results from this study make clear that the class and ethnic composition of schools attended by immigrant youths in early adolescence make a difference and that they do so in non-common sensical ways. If our findings hold, they will have definite implications for policies seeking to improve the educational achievement of students from different class and ethnic backgrounds. A significant issue in need of attention concerns the interpretation of the consistent academic advantages of students from certain immigrant origins, such as Asians, and the inferior performance of others, such as Mexicans. "Culturalist" interpretations have been advanced pointing to the achievement "ethos" associated with a Confucian background and the lack of such drive among groups steeped in a Catholic tradition (49, 50).

Such facile interpretations ignore the specific historical origins of each immigrant group and the ways in which different contexts of reception have affected the socioeconomic adaptation of first-generation immigrants. Adult immigrants, who possess material resources are themselves highly educated and have been well received in the host society, are in a position to effectively support

the education of their offspring. This is the path followed by Chinese and Koreans, immigrants with high-average levels of education and who, as legal immigrants, are entitled to the full protection of the law. In the case of the Vietnamese, lower levels of education were compensated by a still more favorable official reception. As refugees from a communist regime, they were entitled to generous governmental assistance (51, 52).

No such help has been received by Mexican immigrants who have the lowest average levels of education and occupational skills of any sizable immigrant group in the United States and who experience, in addition, a negative reception by the host society and government. The low levels of human capital among Mexicans are *not* a consequence of extraordinarily poor education in their country of origin, but of its geographical proximity to the United States. Other less developed countries have lower average educational levels than Mexico but do not share a 2,000-mile border with the richest country in the world. This geographical accident has enabled tens of thousands of Mexican peasants and unskilled workers to migrate by land in search of manual jobs (53–55).

The presence of so many poor and poorly educated Mexican migrants reinforces already strong stereotypes in the American population and contributes to a highly negative reception. Government authorities regard Mexicans as potentially illegal entrants and treat them accordingly. The general public perceives them as part of a "Third World invasion" by the poor and downtrodden from other lands (50). Simultaneously, and despite these stereotypes, Mexican laborers continue to be in high demand in agribusiness, the construction industry, personal services, and other labor-intensive sectors.

Poor and poorly educated migrant workers congregate in transient and discriminated communities that cannot muster the minimum material and social resources to foster the economic progress of their own members, much less provide for the educational success of their offspring. Mexican youths bring to school a common experience of poverty and a lack of knowledge of the means and the importance of succeeding educationally. The consistent negative "Mexican" coefficient in our own study and in previous analyses of academic attainment directly reflects these realities.

Despite such handicaps, the majority of Mexican-American students still manage to graduate from high school and a minority even moves up to college. That achievement, which reflects the resilience of individual determination despite adverse external circumstances, should not lead us to forget that differences among first-generation immigrants in human capital and contexts of reception cumulate over time, leading to large subsequent inequalities. Should American society wish to achieve a minimum level of equality among its newest citizens, measures are urgently needed to build family and community resources capable of supporting the education of the young.

Schools, especially the inner-city schools that disadvantaged minorities attend, will not accomplish this task. The key lies in the family and community institutions that immigrant groups can develop, but that in the case of those made up mostly of low-skilled workers require extensive outside support (42). Prior results based on a large survey of adult immigrants found that *all* immigrant parents, regardless of nationality, have high educational aspirations for their offspring and are willing to endure major sacrifices to achieve these goals (8). Poorly educated and poorly received migrant laborers living in transient communities lack, however, the know-how or the resources to accomplish those ends. Mexicans are not only the largest immigrant group in the nation but one which, for the reasons explained previously, are among the most prone to find themselves in this situation. To the extent that immigration continues to meet the nation's demand for manual labor, compensatory programs of support to immigrant families and communities must be put in place lest we confine a large number of these workers' children to poverty and permanent social exclusion.

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