EDUCATIONAL ATTITUDES, SCHOOL PEER CONTEXT, AND THE "IMMIGRANT PARADOX" IN EDUCATION

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Abstract

Previous research has been unable to explain declines in educational outcomes across immigrant generations. This study uses data on Mexican and Asian-origin youth from Add Health to test educational attitudes and behaviors as mechanisms linking immigrant generation to four educational outcomes. First, it assesses whether generational changes in attitudes and behaviors correspond to generational differences in educational outcomes. Second, it tests whether generational changes in immigrant children's attitudes depend on the school peer context in which they acculturate. Findings show that educational attitudes and behaviors do decline across immigrant generations, but that these changes in attitudes account for little of the generational variation in educational outcomes. The relationship between immigrant generation and attitudes is strongest in schools with more negative peer cultures.

The educational success of children in immigrant families is of paramount importance to the national interest. One-fifth of U.S. schoolchildren now come from immigrant families, and this number is projected to grow. Whether these children succeed in school will be critical to their ability to become effective workers, parents, and community members. An emerging literature in sociology and education aims to identify the unique educational advantages and disadvantages of immigrants' children. A common finding is that educational outcomes of first-or second-generation immigrant children tend to be better than those of otherwise comparable later-generation children. This is known as the "immigrant paradox" in education (Palacios, Guttmannova, and Chase-Lansdale 2008).

Previous research has found that immigrants' children have very positive attitudes and behaviors toward education, including higher educational aspirations (Kao and Tienda 1995) and greater effort expended on schoolwork (Rumbaut 1997) than children of natives. Noting these initial positive orientations, the sociological literature has often attributed declines in children's educational outcomes across immigrant generations to the negative effects of acculturation (which is assumed to increase across immigrant generations) on children's educational attitudes and behaviors (Portes and Rumbaut 2001; Rumbaut 1997; Steinberg 1996). However, with the exception of educational aspirations, there have been few empirical studies directly examining patterns of generational change in educational attitudes and behaviors. With only one exception (Rosenbaum and Rochford 2008), nor has there been a large-scale study based on national data that explicitly links such generational change

to either acculturation or educational outcomes. This paper tests empirically whether educational attitudes and behaviors do indeed serve as a concrete mechanism linking generation to educational outcomes, including grades, course-taking patterns, high school graduation, and college enrollment

Furthermore, current theoretical perspectives suggest that the context in which immigrants' children acculturate will shape the consequences of acculturation (Portes and Zhou 1993; Portes and Rumbaut 2001; Xie and Greenman 2011). There may not be a uniform relationship between generation and educational attitudes; instead, the relationship may depend on the particular cultural models to which immigrants' children are exposed in the local context. Immigrants surrounded by natives who have more negative attitudes toward education should, all else equal, experience greater deterioration in their own attitudes over time and/or across generations. This paper tests the relationship between peer cultures regarding education and attitudinal change among immigrants' children.

In sum, this paper will provide two key tests of the relationships among immigrant generation, educational attitudes and behaviors, and educational outcomes by a) assessing to what extent generational differences in educational outcomes, including grades, course-taking patterns, high school graduation, and college enrollment, are attributable to generational differences in attitudes and behaviors; and b) examining whether local peer cultures influence temporal and generational changes in immigrants' attitudes and behaviors. A strength of the analysis is that it uses longitudinal data, allowing estimation of the association between earlier attitudes and behaviors and later educational outcomes. Clarifying the role of educational attitudes and behaviors in the educational outcomes of immigrants' children will allow educators and policymakers to better help these children maintain their initial educational advantages.

The "Immigrant Paradox" in Education

Generational patterns in educational outcomes

Many studies have demonstrated that immigrants' children perform unusually well in school. Research has demonstrated a fairly consistent pattern in which either first-generation children, second-generation children, or both outperform their third-and-higher (henceforth "native") generation peers. For example, several studies have shown that after taking into account family SES, children of Mexican (Landale, Oropesa, and Llanes 1998), Hispanic (Driscoll 1999; Perreira, Harris and Lee 2006), and Asian (Perreira, Harris and Lee 2006) immigrants are less likely than either same-race or White native peers to drop out of high school. Other studies have shown that immigrants' children outperform native peers in test scores (Harris, Jamison and Trujillo 2008; Kao and Tienda 1995; White and Glick 2009) and GPA (Kao and Tienda 1995; Pong, Hao, and Gardner 2005; Rumbaut 1997; Steinberg 1996). This apparent educational advantage of immigrants' children, who might be thought at first glance to be educationally disadvantaged due to weaker English skills and lesser familiarity with American culture, has been termed the "immigrant paradox" in education (Palacios, Guttmannova, and Chase-Landsdale 2008).

These findings suggest a pattern of generational declines in the school performance of immigrants' children. For immigrant groups who have relatively high average education and income levels, such as many Asian groups, the advantage of immigrants' children is readily observable by comparing average generational differences in educational outcomes such as grades and test scores. For less socioeconomically advantaged groups, such as Mexican 4 immigrants, this generational advantage frequently becomes apparent only after controlling for family income and parental education. In this case, the key finding is that immigrants' children tend to have better educational outcomes than children of natives with similar

socioeconomic disadvantages. White and Glick (2009) term this pattern, in which being the child of an immigrant confers a net advantage in educational outcomes, "superachievement." For socioeconomically disadvantaged immigrant groups, outcomes such as high school graduation rates may actually improve on average across generations, but not enough to achieve parity with native whites and not as much as would be expected based on the improvement in socioeconomic conditions (particularly parental education, for Hispanics) that also tends to occur across generations.

After controlling for generational improvements in socioeconomic status, very few studies have found evidence of generational improvements in educational outcomes. Exceptions include Fischer (2010), who found that high school nonenrollment was higher for foreign-born than native born youth, and Glick and White (2003), who found that in 1980 native-generation children had higher reading and math scores than first or second-generation children; however, they also found that in 1990 the pattern was reversed, with first- and second-generation children having the highest scores. Thus the literature shows a pervasive pattern in which, all else equal, immigrant generation is inversely related to educational outcomes.

Theoretical Perspectives

What could account for this educational advantage among immigrants' children? Classical assimilation perspectives would predict generational improvement, not decline, in the average educational outcomes of immigrant groups. In particular, *straight-line assimilation theory* (Gans 1973) predicts a relatively linear pattern of socioeconomic improvements across generations. The empirical patterns noted above constitute an anomaly from the perspective of straight-line theory. Modern perspectives on immigrant assimilation, by contrast, posit a more complex relationship between immigrant generation and educational outcomes. In particular, several variants of modern assimilation theories suggest that acculturation may be negatively related to educational outcomes for immigrants' children.

The Immigrant Optimism Perspective: The Importance of Attitudes and Behaviors—The *immigrant optimism hypothesis* (Kao and Tienda 1995) argues that immigrant parents come to the U.S. with very high levels of motivation to succeed and optimism about their children's life chances, which they pass on to their children. Immigrants' children therefore work hard in school, have high educational aspirations, and have positive attitudes toward schooling. These beneficial behaviors and attitudes, however, may be lost with greater acculturation, which typically occurs in later immigrant generations. Thus, the immigrant optimism hypothesis suggests that acculturation may hurt immigrants' educational achievement because it is associated with the loss of the positive orientations to education.

Because later immigrant generations are generally more acculturated than earlier ones, generational declines in educational outcomes have often been taken for evidence of the negative effects of acculturation. For example, Portes and Rumbaut (2001, p. 239) conclude that "both U.S. nativity and long-term residence among the foreign-born increase English skills but significantly lower grades…these finding strongly suggest that second-generation children gradually lose their achievement drive with increasing acculturation." This quotation illustrates a chain of reasoning that is common in the literature: Immigrant generation and/or length of residence are treated as proxies for acculturation, acculturation is assumed to be related to a loss of achievement drive, and loss of achievement drive is assumed to be responsible for 6 generational differences in educational outcomes. While this is a reasonable interpretation of the results of many studies, the various links in this chain are usually not explicitly tested.

This chain of reasoning is illustrated graphically in the conceptual model presented in Figure 1. Part i) of the figure depicts the total effect of immigrant generation on educational outcomes, Path A*. Part ii) of the figure decomposes the total effect A* into the indirect pathway operating through educational attitudes and behaviors (Paths B and C) and the remaining effect (Path A), which includes both the direct effect of generation on outcomes and any indirect effects through mechanisms other than attitudes and behaviors. In the language of classical path analysis, the indirect effect of generation operating through educational attitudes and behaviors can be measured as the difference between Path A* and Path A. The size of this indirect effect is determined by both the magnitude of Path B (the relationship between generation and attitudes/behaviors) and Path C (the relationship between attitudes/behaviors and educational outcomes)[1]. While much previous literature has established the existence of Path A*, much less has directly examined the indirect pathway operating through attitudes and behaviors. Instead, the existence of this indirect pathway has been merely assumed or speculated upon.

To establish whether the effect of generation on outcomes is mediated through attitudes and behaviors, it is necessary to directly test both Path B and Path C. Considering Path B, only a handful of studies have explicitly linked either immigrant generation or acculturation to "achievement drive" and other education-related attitudes, but those few have supported the contention that immigrants' children have more positive attitudes than children of natives. Kao and Tienda (1995) showed that first- and second-generation children had higher educational aspirations than native-generation children. Rumbaut (1997) and Steinberg (1996) presented evidence that immigrants' children put more time and effort into their schoolwork than their native-generation peers. Similarly, Suarez-Orozco and Saurez-Orozco (1995) demonstrated that Mexican-born immigrant youth have higher levels of achievement motivation and more positive attitudes toward schooling than U.S.-born Mexican Americans or Whites. By establishing the existence of Path B, these findings lend partial support to the assumption of Portes and Rumbaut (quoted above) and many other researchers that declines in educational attitudes are responsible for generational declines in observed educational outcomes. However, little research has taken the next necessary steps: Establishing Path C and examining how much of Path A* can be attributed to Paths B and C (that is, the difference between Path A* and Path A).

Although little research has examined the existence of Path C specifically among immigrants' children, the significance of educational attitudes as predictors of educational outcomes among natives is contentious. Many studies find that positive attitudes toward schooling coexist with poor schooling performance (Mickelson 1990), while others debate whether attitudes toward schooling play a significant role in creating racial differences in achievement among natives (Ainsworth-Darnell and Downey 1998; Farkas 2002). Given the lack of consensus about Path C, it is especially important to examine its existence empirically among immigrants' children before attributing generational patterns in outcomes to attitudinal change. In one of few studies to consider the role of educational attitudes specifically among immigrants' children, Suarez-Orozco, Rhodes and Milburn (2009) provide evidence that academic engagement significantly predicts academic achievement for first-generation immigrant children..

To my knowledge only two studies have jointly examined paths A, B and C among immigrants' children. Fuligni (1997) showed that a large portion of the advantage in math and English grades of immigrants' children (relative to native classmates) was attributable to their more positive educational attitudes. Because this study was based on a relatively small

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[1] In a linear model, the size of this indirect effect would be calculated as the product of Path B (the effect of generation on attitudes and behaviors) and Path C (the effect of attitudes and behaviors on outcomes).

sample of students in one school district, however, it is unclear how generalizable the results are. A recent study by Rosenbaum and Rochford (2008) is the first to directly test the relationships among generation, attitudes, and outcomes using a nationally representative data source. While Rosenbaum and Rochford confirmed findings of more positive educational attitudes and behaviors among children in immigrant families, they found ambiguous evidence of generational differences in test scores once family background characteristics were controlled. Controlling for attitudes, then, could not "explain" generational differences in outcomes; instead, the results suggested that immigrants' children would be at a disadvantage relative to their native-generation peers if it were not for their positive attitudes and behaviors.

This paper builds on Rosenbaum and Rochford's (2008) and Fuligni's (1997) studies by using a nationally representative data source to test the role of educational attitudes as mediators between immigrant generation and educational outcomes. I first model the relationship between immigrant generation and educational attitudes and behaviors (Path B). I then estimate a series of models in which educational outcomes are the dependent variable, allowing me to estimate Paths C, A*, and A. Explicitly testing each link of this pathway is crucial to understanding why educational outcomes decline across immigrant generations. However, the relationship between immigrant generation and educational attitudes and behaviors needs to be further interrogated if generational changes are to be attributed to acculturation. If generational changes are due to acculturation, there should not be a single Path B that is applicable to all immigrant groups; rather, Path B should vary depending on the cultural context. Previous literature has not considered this possibility. As I discuss below, there are theoretical reasons to suspect that the peer cultures to which immigrants are exposed may be key in shaping Path B.

Segmented Assimilation Theory: The Role of Peer Cultures—Segmented assimilation theory (Portes and Zhou 1993), like the immigrant optimism hypothesis, suggests that acculturation may be related to negative changes in educational attitudes and behaviors for immigrants' children. In contrast to the immigrant optimism hypothesis, segmented assimilation theory points to the cultural patterns in the host society that immigrants are thought to adopt during the process of acculturation as the root of these negative changes. This perspective recognizes that there are multiple distinct subcultures that immigrants may acculturate to. Some immigration scholars have been concerned that some children of immigrants may acculturate into "oppositional cultures" (Fordham and Ogbu 1986) supposedly found among American youth, particularly minority youth (Zhou 1997; Portes and Rumbaut 2001). Although the existence and effects of oppositional cultures have been disputed on empirical grounds (Harris and Robinson 2007; Tyson, Darity, and Castellino 2005), immigration scholars have nonetheless expressed concern that if immigrant children adopt these cultural models, their schooling may suffer (Portes and Zhou 1993). The existence of an "oppositional culture" among minority youth is not necessary for this argument to apply: Other authors, such as Steinberg (1996) and Feliciano (2001), note the indifferent or dismissive attitudes toward education prevalent in American adolescent culture more generally. Thus, segmented assimilation theory highlights the acquisition of negative orientations toward education rather than the loss of positive orientations, as in the immigrant optimism hypothesis.

This study examines the relationship between peer culture, measured at the school level, and the educational attitudes of immigrant youth. In so doing, it provides a more stringent test of the role of acculturation in creating generational differences in children's attitudes than has been found in previous literature. If immigrant students learn negative attitudes from their American peers during the process of acculturation, then later-generation, more acculturated immigrant youth should be more affected by the prevalent peer attitudes than earlier

generation, less acculturated youth (Callahan, Wilkinson and Muller 2008). The following hypothesis is implied: There will be a significant interaction between immigrant generation and school peer culture such that earlier-generation students' own attitudes will be less affected by school peer culture than later-generation students' attitudes. This hypothesis is illustrated graphically in Part iii) of Figure 1. Here, rather than proposing a uniform Path B as in Part ii), the effect of generation is allowed to differ according to the school peer context. In schools with more negative peer contexts, the relationship between generation and attitudes and behaviors (B^2) is expected to be negative, as in Part ii). In schools with more positive peer contexts, the relationship (B^1) is expected to be less negative, perhaps neutral. (For purposes of visual presentation of an interaction effect, Figure 1 presents a stylized depiction of peer context as either positive or negative; however, in reality it is a continuum and it is treated as such in the analysis). This paper provides the first analysis of the relationship between peer culture and immigrant children's patterns of attitudinal change.

Data and Methods

Data

This study uses data from Waves 1–3 of the National Longitudinal Study of Adolescent Health (Add Health) (Harris 2009) and its educational supplement, the Adolescent Health and Academic Achievement Study (AHAA). Add Health is a school-based survey of adolescents who were in grades 7–12 in 1994–1995. The in-school portion of the survey was administered to all students in the sampled schools who were present on the day of the survey and covered such topics as demographic characteristics, parental education, attitudes toward school, and grades. A smaller "core" sample of students completed additional interviews at home covering topics such as nationality of students and of their parents, family income, and language spoken in the home. All in-home sample members except those who had been in 12th grade at Wave 1 were interviewed again in 1995–1996 (Wave 2). All members of the Wave 1 sample who could be located were interviewed again in 2001–2002 (Wave 3).

Although Add Health's sample is large and nationally representative, its sample size is not large enough to make comparisons across three generations for most specific country-of-origin groups. Therefore, I pool Asian-origin groups and treat specific country of origin as a control variable in regression models (pooled N=1,020). For Mexican youth (N=1,125), the sample size is large enough to compare three generations within a single country-of-origin group. Both of these groups are also compared to third-plus generation whites (N=6,971). Analyses were initially conducted for pooled Hispanic youth as well. However, as Mexicans are numerically dominant in Add Health data, results for pooled Hispanics are very similar to those for Mexicans. Sample sizes for other individual Latin American country-of-origin groups are too small to allow for country-specific analyses.

Control variables

Key demographic variables, such as age, gender, immigrant generation and parental country of origin, are taken from the Wave 1 survey. An adolescent is coded as being first generation if s/he and at least one parent were born outside the U.S., second generation if s/he was born in the U.S. but at least one parent was born outside the U.S., and native generation if both parents and the adolescent were born in the U.S. Parental education is measured as "average parental education," reflecting the average of parental education in two-parent families or the education of the residential parent in single-parent families. Family structure is coded into several dummy variables distinguishing families with two biological residential parents (omitted), with two residential parents but a biological parent living elsewhere

("stepparent"), with only one residential parent ("single parent"), and with no parents present. Because this last category was so small, it is combined with "single parent" in the regression models. Family income is the only control variable taken from the parent, rather than the adolescent, interview. Because it was not possible to interview parents for a significant number of respondents, this variable is missing for approximately 20% of respondents with otherwise complete data. Family income is imputed for these cases. Specifically, predicted values for family income are generated using a multiple regression equation estimated from cases with complete data. These predicted values are used to measure family income for cases with missing values on this variable. Parental education, a key control variable, was imputed using similar methods in cases with missing values (n=791). An imputation flag is included as a control in all regression models. Cases with missing values on other variables in the analysis (a total of 118, or .6% of the sample) were deleted from the analytical sample.

A final control variable applies only to models among Asians. There is great diversity in terms of immigration history, socioeconomic status, geographic dispersal, and many other factors among different Asian groups, but Add Health lacks the requisite sample size to do separate analyses for specific country-of-origin groups while also including three generations of Asian Americans in the models. Like many preceding studies of children of immigrants, I therefore combine the Asian-origin groups into a single analysis and control for ethnicity in the multivariate models. While it would be preferable to include dummy variables for each specific ethnicity in the models, this strategy resulted in extremely large standard errors due to the small number of cases in many groups, particularly of third-plus generation members. Therefore, I adopt the strategy used by Harris, Jamison and Trujillo (2008) and divide Asians into two groups. Group A is comprised of the more socioeconomically advantaged immigrant groups, Chinese, Koreans, Japanese, Filipinos, and Indians[2]. Group B is made up of groups who are generally socioeconomically disadvantaged, including Vietnamese, Cambodians, Laotians, Pacific Islanders, and other Asians. A dummy variable indicating membership in Group B is included in the multivariate models.

Educational Attitudes and Behaviors

Educational attitudes and behaviors are measured from two series of questions included in the in-school survey and the Wave 1 and Wave 2 in-home surveys. In the first series, students report how often during the current school year they have "had trouble" with the following school-related behaviors (0=never to 4=everyday):

- Getting along with your teachers?

- Paying attention in school?

- Getting your homework done?

- Getting along with other students?

The second series asks students to rate their agreement with the following statements (1= "Strongly agree" to 5= "strongly disagree"):

- You feel close to people at your school

- You feel like you are a part of your school

- You are happy to be at your school

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[2]Note that Add Health contains a higher proportion of Filipinos within Group A than the overall United States population due to the fact that the largest saturated school (school in which every student was interviewed) contained a high proportion of Filipinos.

- • The teachers at your school treat students fairly

All items were recoded so that a higher score meant a more positive attitude. After experimenting with individual items, I concluded that all 8 items could be combined into a single scale (alpha=.76) with a minimum of 8 (for respondents giving the most negative response for each item) and a maximum of 40 (for respondents giving the most positive response for each item)[3].

A separate question on the in-home survey asks respondents how many times they have skipped school without an excuse in the past year. Most responses for this measure are clustered at very low values. Therefore I code it into a dichotomous variable equaling 1 if the respondent did not skip school or skipped only 1–2 times, 0 otherwise.

The final measure, effort expended on schoolwork, comes from a question included only on the in-school survey. In answering the question "In general, how hard do you try to do your school work well?", students could choose among four responses ranging from "I try very hard to do my best" to "I never try at all." I code this variable into a dichotomous measure equaling 1 if the response is "I try very hard to do my best", 0 otherwise. Because not all Add Health in-home respondents were in school on the day of the in-school survey, sample sizes are about 24% smaller for analyses including this measure than for analyses based on only data collected from the in-home survey.

School Peer Culture

Within-school average attitudes toward education are used as a measure of school peer culture. The sample design of Add Health, in which students are clustered within schools, makes it possible to compute the average of the attitudes scale described above across all sampled students within each school.

Educational Outcomes

This study examines four educational outcomes: High school graduation, college enrollment, high school grade point average (GPA), and math and science course completion. By Wave 3 of Add Health, even the youngest respondents should have graduated from high school. I construct a variable indicating high school graduation from the Wave 3 survey (yes=1). College enrollment is measured with a variable indicating whether or not a respondent had ever attended a postsecondary institution within 2 years of the date they either graduated from or should have graduated from high school (yes=1). I use "ever attendance" because it is a meaningful measure for all Add Health respondents, including those who are still college-age. High school GPA is taken from the AHAA study, which provides detailed educational data constructed from the high school transcripts of Add Health respondents. It is reported on a traditional 4 point scale. Math and science course completion is examined as a measure of students' preparation for college. Completion of math at least through Algebra II and completion of science at least through chemistry are both strong predictors of college enrollment (Callahan et al.2008). I use a strategy to measure math and science course taking based on that used by Callahan et al. (2008). The measure ranges from 0 to 4. A 0 indicates that a student took no math beyond algebra and no science beyond general science. A 1 indicates that the student took either geometry or biology, but not both. Students who took both biology and geometry, but nothing higher in either math or science, score a 2. Students who took one additional course in either math or science (i.e., algebra II for math or chemistry for science) score a 3.

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[3]I also tried using Principle Components Analysis to construct the scale. A single factor emerged, and results using this version of the scale were virtually identical to those presented here.

Finally, students who took both algebra II and chemistry score a 4. English classes are not included in this measure because enrollment in English courses is likely to have different patterns for English language learners, muddying generational comparisons.

Descriptive statistics on all key dependent and independent variables, by ethnic group and generation, are given in the Appendix table.

Sensitivity Analysis

The temporal order of the measurement of educational outcomes relative to the measurement of attitudes is a concern when using outcome measures based on all four years of high school transcript data. Attitudes are measured at Wave 1. For students in later high school grades at Wave 1, attitudes are thus measured after GPA and college-prep coursetaking have been partially or (for 12th graders) almost completely determined. To overcome potential biases that could result if students' educational performance affects their attitudes toward school, I constructed two alternative measures of GPA and one alternative measure of college-prep coursetaking, all measured approximately 1–1.5 years after the Wave 1 interview. The alternative GPA measures were a) 1996–1997 school year GPA from the transcript data, and b) self-reported GPA from the Wave 2 interview. Constructing a measure of college-prep coursetaking measured only after the Wave 1 interview is more difficult. The original measure, which was based on the entire high school career, is not logically applicable to students in earlier grades, who have not yet had the opportunity to take many advanced courses. I therefore create a binary measure indicating whether a student was enrolled in any advanced math or science class in the 1996–1997 school year. As all the students were in high school by 1996–1997, this measure is potentially applicable to all members of the sample. For both alternative measures, respondents who graduated or dropped out prior to 1996–1997 are lost, decreasing the sample size.

I modeled the effects of attitudes on the original and alternative measures of GPA and coursetaking to determine whether the results were sensitive to maintaining strict temporal order between the measurement of attitudes and outcomes. I found that they were not. For GPA, the coefficients for the effect of the attitudes scale on the high school average, 1996–1997, and Wave 2 self-report versions of GPA were almost identical. (.04 for all three). For the college-prep coursetaking measures, the effects of attitudes were positive and significant for both versions (effect sizes were not comparable because the high school count measure was modeled using OLS, while the binary measure of 1996–1997 enrollment was modeled using logistic regression). It is preferable to use the measures based on overall high school transcript data, which maximize sample size and also provide much greater detail about college-prep coursetaking patterns. Therefore, I present results only from the overall transcript measures described above.

Methods

Part 1 of the analysis investigates the role of educational attitudes and behaviors as intermediary factors between immigrant generation and educational outcomes. It answers two key questions: Is there evidence of a generational pattern of change in educational attitudes and behaviors consistent with known patterns of change in educational outcomes? If so, to what extent does this change in attitudes/behaviors explain these generational changes in educational outcomes? I first examine generational patterns in educational attitudes and behaviors (referring back to Figure 1, Path B). The educational attitude scale is modeled using OLS regression, while putting maximum effort toward school and rarely/ never skipping school are modeled using logistic regression. I run separate models for Mexican and Asian youth. For each outcome, I compare four groups: First, second, and native-generation Mexican (or Asian) youth and native-generation whites. Thus, the models

contain only Mexican (or Asian) youth of any generation and native-generation whites. In each model, native whites are the omitted category and dummy variables are included for first-generation, second-generation and native-generation Mexican (Asian) youth. Statistically significant differences between the three generations of Mexican (Asian) youth are indicated in the tables by footnotes for each model.

I next establish the relationship between immigrant generation and the four educational outcomes (Path A* as illustrated in Figure 1). I use a similar modeling strategy to that outlined above. High school graduation and college enrollment are modeled using logistic regression, while college prep course taking and GPA are modeled with OLS regression. Finally, I include the attitudinal and behavioral measures in the models for educational outcomes. This allows me to test whether initial generational differences in outcomes can be attributed to generational differences in attitudes and behaviors (difference between Path A and Path A*). All models for Part 1 of the analysis adjust the standard errors for clustering at the school level.

Part 2 of the analysis examines the role of school peer context in creating generational differences in immigrant children's educational attitudes. I model educational attitudes as a function of generation and school peer context using multi-level models with a cross-level interaction between school peer attitudes (Level 2) and generation (Level 1), as given by the following equations:

$$Y_{ij}=\beta_{0j}+\beta_{1j}G_{ij}+\beta_2X_{ij}+r_{ij}$$
$$\beta_{0j}=\gamma_{00}+\gamma_{01}A_j+\mu_{0j}$$
$$\beta_{1j}=\gamma_{10}+\gamma_{10}A_j+\mu_{1j}$$

Here, Y is the attitude scale of student i in school j; G is a vector of 3 dummy variables representing first, second, and third-plus immigrant generations for a given ethnic group (with native whites as the omitted category); X is a vector of individual-level control variables, and A is the aggregated measure of school peer attitudes. I model both Wave 1 attitudes and change in attitudes between Wave 1 and Wave 2. The interaction terms test whether the association between generation and attitudes/behaviors varies across school peer contexts. If these models show that there is a stronger (negative) correlation between generation and attitudes and/or greater attitudinal deterioration over time in schools with more negative peer cultures (i.e., in terms of Figure 1, Path B[2] is more negative than Path B[1]), this would support the acculturation explanation of attitudinal change.

Results

Part 1

Table 1 presents results showing the relationship between immigrant generation and educational attitudes and behaviors for Mexican-origin youth. The results for the attitudes scale show that first-generation Mexican immigrant youth have significantly more positive educational attitudes than native-generation whites, second-generation Mexican youth, and native-generation Mexican youth, regardless of adjustments for covariates. First-generation Mexican youth are also more likely than native whites to report trying their hardest to do well in school, but generational differences among Mexicans are not statistically significant. Finally, second- and native-generation Mexican youth are less likely than native whites to report that they rarely skip school, and this difference is not explained by covariates. First-generation Mexican youth are also significantly more likely to be rare school skippers than either second or native-generation Mexican youth.

The results shown in Table 2 indicate that like first-generation Mexican youth, first-generation Asian youth also have more positive educational attitudes and behaviors than the other groups included in the analysis. First-generation Asian youth score significantly higher on the attitudes scale and are significantly more likely to put maximum effort into their schoolwork than either native-generation whites or Asians. Second-generation Asian youth are also more likely than either native-generation whites or Asians to put maximum effort into their schoolwork. While none of the three Asian groups differs significantly from whites in the likelihood of skipping school, native-generation Asians are significantly more likely to skip than first-generation Asians.

Overall, the results show evidence of a generational decline in favorable educational attitudes and behaviors for both Mexican and Asian youth. The first generation has more favorable attitudes and behaviors than either same-ethnicity native-generation peers or native whites. Native-generation Mexican and Asian youth are similar to native generation whites. Tables 3 and 4 present a series of nested models that test the contribution of attitudes and behaviors to generational differences in educational outcomes. Three models are presented for each of the four educational outcomes: Unadjusted, adjusted for family background and demographic characteristics, and adjusted for attitudes and behaviors (in addition to family background and demographic characteristics). Maximum effort at schoolwork was not included in the final version of these models because it did not predict any of the outcomes and did not improve model fit. Furthermore, due to the Add Health survey design, it was measured for only a subsample of respondents, so its inclusion would restrict the size of the analytical sample. Examining change in the immigrant generation coefficients after adding attitudes and behaviors to the model informs us of the extent to which attitudes and behaviors account for generational patterns in outcomes.

The first two columns for each outcome show generational patterns in educational outcomes, unadjusted (Column 1) and then adjusted for background characteristics (Column 2). In table 3, the unadjusted model (Column 1) for high school graduation shows that all three generations of Mexican youth have significantly lower odds of graduating from high school than native white youth, but there are no significant generational differences among Mexicans[4]. The adjusted model (Column 2) reveals that the gap in high school graduation between Mexicans and native whites is attributable to family background characteristics: controlling for parental SES and family structure, none of the three generations of Mexican-origin youth have significantly different odds of high school graduation than native whites, nor is there any difference among Mexican youth by generational status.

College-preparatory math and science course completion is presented in the upper right panel of Table 3. The unadjusted model shows that second- and native-generation Mexican youth, but not first-generation youth, complete fewer math and science courses in high school than native whites. Again, there are no significant differences among the three generations of Mexicans. After adjusting for family background, however, a different generational pattern emerges: First-generation Mexican immigrant youth take significantly *more* math and science courses in high school than either native whites or native-generation Mexican youth with similar family background characteristics.

The results for college enrollment and GPA follow similar patterns. Although all three generations of Mexican-origin youth have lower odds of college enrollment in the unadjusted model, the adjusted models shows that both first- and second-generation Mexican youth have higher odds of enrolling in college than either native-generation

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[4]Generational differences among Mexican and Asian youth are tested by changing the omitted category in the regression models until all possible generational comparisons have been made.

Mexican youth or native-generation whites, although for the first generation this difference is only marginally significant. The analysis of GPA also reveals a first-generation advantage for Mexican youth: After adjusting for family background characteristics, first-generation youth have significantly higher GPAs than either native-generation Mexican or white youth. There is no statistically significant difference between the average GPA of second-generation Mexican youth and that of any of the other groups.

Results for Asian youth, presented in Table 4, reveal fewer within-group differences than were observed for Mexican youth. The unadjusted models for all four outcomes show that both first- and second-generation Asians have better educational outcomes, on average, than native-generation whites. By contrast, native-generation Asians have a significant advantage relative to native whites for only one outcome – high school graduation. For first-generation Asian youth, these differences relative to native whites persist after controlling for family background regardless of the outcome. With the exception of GPA, this is largely true for the second generation as well.. In only one case, however, are there significant differences by generation among Asians: In the adjusted model, first-generation Asians are more likely to enroll in college than their native-generation counterparts.

Overall, the results support the notion of an advantage for children of immigrants for Mexican youth. Not only do first- and (sometimes) second-generation youth do significantly better than socioeconomically comparable native whites, they also perform better than native-generation youth of the same ethnicity. For Asians, the generational pattern is less clear. On the one hand, first- and second-generation Asian youth do significantly better than native whites on all four outcomes, while native-generation Asian youth do not. On the other hand, generational differences among Asians are generally not statistically significant. It is possible that the smaller sample size of Asians, relative to Mexicans, makes it more difficult to find statistically significant within-group differences.

Do educational attitudes and behaviors serve as mediators for the effect of immigrant generation on educational outcomes? This question is examined in the third column for each outcome in Tables 3 and 4. For attitudes and behaviors to mediate the effects of generation, it is necessary to establish the existence of both Path B and Path C from Figure 1 (part ii). Tables 1 and 2 established the relationship depicted by Path B, demonstrating deterioration across generations in educational attitudes and behaviors for both Mexicans and Asians. Tables 3 and 4 demonstrate the relationship depicted by Path C, the effect of attitudes/behaviors on educational outcomes. The results show that both the attitudes scale and rarely skipping school are highly significant predictors of all four educational outcomes. Maximum effort at schoolwork was not a significant predictor of any of the four outcomes and was therefore excluded from the final models (results available upon request).

To what extent do these generational differences in educational attitudes and behaviors explain the generational differences in educational outcomes? In other words, referring back to Figure 1, how much difference is there between Path A* and Path A? For generational comparisons among Asians or among Mexicans, the answer is a uniform "not much." Adding the attitudinal measures to the models displayed in Tables 3 and 4 causes little change in the estimated effects of generation overall, and in no case does it explain within-group generational differences. Educational attitudes and behaviors contribute more to the advantage of first-generation Mexican immigrants relative to native whites: The first-generation coefficients for both college enrollment and GPA lose statistical significance after the attitudes scale is added to the model, and the coefficient in the college prep coursework model becomes only marginally significant. For all three of these outcomes, the magnitude of the first-generation coefficient is reduced by about 20–25%. Educational attitudes thus explain some, but by no means all, of the positive outcomes of first-generation

Mexican youth relative to native-generation whites. For Asians the pattern is similar, but not as strong. Overall, the results suggest that the educational advantages of first-generation immigrants are only partially mediated by their positive educational attitudes and behaviors.

Part 2

Results for the second part of the analysis, which tests the relationship between school peer context and educational attitudes for immigrants' children, are presented in Tables 5 and 6. Segmented assimilation theory suggests that earlier-generation, less acculturated youth would be less affected by surrounding peer contexts than later generation youth, who are expected to be more integrated into native peer groups. If this is the case, there should be a negative interaction between being first (or second) generation and school peer attitudes. The results shown in Table 5 indicate partial support for this hypothesis among Mexican youth. The first two columns give models predicting the attitude scale as measured at Wave 1. The coefficient of peer attitudes is positive and significant, as expected. The interaction terms show that the correlation between school peer attitudes and individual attitudes is weaker for second-generation Mexican youth than for either native whites or native-generation Mexican youth.

The last two columns model change in attitudes between Wave 1 and Wave 2. The dependent variable is Wave 1 attitudes subtracted from Wave 2 attitudes. Because there is a "regression to the mean" effect between the two waves, in which respondents with unusually low attitudes at Wave 1 tend to have improved attitudes at Wave 2 and vice versa, it is necessary to control for Wave 1 attitudes. School peer attitudes are positively correlated with change in attitudes between Waves 1 and 2 overall. However, this is not the case for first-generation Mexican youth: change in first-generation Mexican youths' attitudes over time is not as correlated with school peer culture as for either second-generation Mexican youth or native-generation whites, and the estimated effect of school culture overall is not significantly different from zero for first-generation Mexican youth (result not shown). Overall, Table 5 supports the hypothesis that peer attitudes are less predictive of own attitudes for Mexican immigrants' children than for native-generation youth.

Results for Asians are given in Table 6. The results are consistent with the hypothesis that first-generation youth are less susceptible to peer attitudes than later-generation youth: The estimated effect of school peer attitudes on Wave 1 attitudes is significantly weaker for first-generation Asian youth than for either native-generation Asian or white youth or, in Model 2, than for second-generation youth. When the outcome is measured as change in attitudes over time, however, there is no further evidence of generational differences in the role of peer attitudes. For Asian immigrants' children, it appears that the processes generating generational differences in the relationship between peer and own attitudes have already taken place by Wave 1, with little additional difference occurring between Waves 1 and 2.

Discussion and Conclusion

Does acculturation lower educational achievement for children of immigrants? Attempts to answer this question have often been hampered by untested or untestable assumptions. The most common measures of acculturation used in the literature, such as adoption of the English language and U.S. versus foreign birth, are theoretically unlikely to have a direct negative effect on educational outcomes; there is nothing inherent about speaking English or being born on U.S. soil that should predict poorer educational outcomes. Instead, there must be a mediating factor more proximal to educational outcomes. Attitudes and behaviors toward education are potential mediating factors that have been frequently suggested but rarely examined empirically in the population of immigrant children. This paper provided explicit empirical tests of several relationships that have typically been merely proposed or

assumed to exist by previous literature. First, it tested whether immigrant children's educational attitudes and behaviors do in fact decline across generations. Second, it tested whether such generational differences in attitudes and behaviors can explain generational differences in educational outcomes. Third, it examined the role of peer attitudes in shaping the attitudes of acculturating children in immigrant families.

This analysis confirms that, as has been suggested by many previous scholars, first- and (to a lesser extent) second-generation children have very positive attitudes and behaviors regarding education. Compared to native-generation whites, first-generation Mexican and Asian immigrant adolescents have more positive attitudes toward school and put more effort into schoolwork. First-generation students of both groups also have more positive attitudes and are less likely to skip school than native-generation peers of the same race. When the comparison group is white natives, the paper also finds strong evidence of an "immigrant advantage" in educational outcomes. Asian immigrant youth are more likely to graduate from high school, take more math and science classes, are more likely to enroll in college, and have higher GPAs than native white youth. For Mexicans, this "immigrant advantage" is normally masked by their high rates of poverty and low levels of parental education; once these factors are controlled, however, first-generation Mexican youth take more math and science courses, have higher GPAs, and are marginally more likely to enroll in college than white natives. Within-ethnic-group generational declines are also evident for Mexicans, but not for Asians, although I do find that native-generation Asians do not have the same educational advantages (relative to native whites) as first- and second-generation Asians.

It has frequently been proposed that immigrant children's exposure to negative American peer attitudes toward education leads to deterioration of their own attitudes. Because U.S.-born children are necessarily exposed to American peer groups for longer than same-age foreign-born children, this proposition has also been treated as an explanation for generational differences in attitudes. This paper tested this explanation by examining the link between school peer attitudes and generational differences in educational attitudes for Mexican and Asian youth. I argue that if the peer exposure argument is correct, then earlier-generation adolescents, who are likely to be less acculturated and less integrated into American peer groups, should be less affected by school peer cultures than later-generation adolescents. The results supported this hypothesis, at least partially, for both Mexican and Asian youth. The Wave 1 attitudes of immigrants' children (the first generation among Asians, the second generation among Mexicans) were less affected by the school peer context than those of their native-generation peers. Change in attitudes over time was also less responsive to school peer attitudes for first-generation Mexican youth than for other generational groups. Thus, overall there is some evidence of the protective effect of immigrant status proposed by segmented assimilation theory: Immigrants' children may be less susceptible to negative peer influences than natives' children. In terms of Figure 1, part iii), Path B[2] does appear to be more negative than Path B[1].

The results thus suggest that acculturation plays a role in the deterioration of educational attitudes across immigrant generations. But how important are attitudes in explaining the generational patterns observed in educational outcomes? Overall, this paper fails to support the hypothesis that the positive educational attitudes and behaviors of immigrants' children play a major role in their educational advantage. Neither attitudes toward school, truancy, nor self-reported effort toward schoolwork explains the observed generational patterns in educational outcomes. Closer examination of these results reveals why: In the case of educational attitudes, the relationship between generation and attitudes is fairly strong, but the relationship between attitudes and outcomes, while highly significant, is small in magnitude. In the case of rarely skipping school, there is a stronger relationship with outcomes but the relationship with immigrant generation is fairly weak. Self-reported effort

at schoolwork (results not shown) did not predict outcomes at all. Thus, none of these variables meets the conditions necessary to be strong mediators of the relationship between generation and outcomes.

The interpretation of this result is helped by contextualizing it within the literature on the relationship between educational attitudes and outcomes among native youth. Many studies have shown that positive attitudes can coexist with negative educational outcomes. Much depends, however, on the specific educational attitudes being considered. Mickelson (1990) distinguished between abstract attitudes, which reflect the normative view that education is important to get ahead in society generally, and concrete attitudes, which reflect an individual's assessment of structural conditions facing his or her own group. Abstract attitudes tend to vary little across social groups and do not strongly predict outcomes, while concrete attitudes are more predictive of educational success (Carter 2005; Mickelson 1990).

Given these findings, was it a foregone conclusion that educational attitudes and behaviors would not serve as a strong mediator between generational status and educational outcomes in this study? The answer is "no" for two reasons: First, the attitudes and behaviors measured here bear little resemblance to the "abstract" attitudes that have been criticized by previous scholars. This study focused on attitudes reflecting students' day-to-day feelings about their own schooling experiences, as well as concrete behaviors affecting schooling. Second, the findings showed strong variation across immigrant generations in educational attitudes and behaviors. Previous studies, by contrast, have concluded that group variation in attitudes cannot serve as an explanatory factor because there is so little variation to be found (Mickelson 1990).

This study confirmed a strong pattern of generation decline in attitudes toward school. While there is some evidence that earlier-generation children are less affected by negative school peer attitudes than later-generation children, this generational pattern is not as strong as the generational pattern in attitudes. It is thus useful to consider factors in addition to peer influences that may contribute to generational declines in attitudes. For example, first-generation students who began their education in the country of origin likely have a different frame of reference regarding school. While immigrant parents often express frustration at the perceived leniency, informality, and lack of respect for authority in American schools relative to schools in the home country (Portes and Rumbaut 2001), these differences may be seen as positives by their children, who may therefore have warmer feelings toward school. Another potential source of generational differences in attitudes may be the different responses of authority figures, especially teachers, to first- versus later-generation students. Previous research has indicated that teachers frequently view first-generation students in a more positive light than later generation students, perceiving them as better behaved and more compliant in the classroom (Matute-Bianchi 1986). Especially for Mexican Americans, who have experienced a long history of stigma and segregation within American schools, first-generation students may thus escape some of the more negative reactions from teachers that second- and later-generation students are likely to encounter. For Asian Americans, who are often viewed as a "model minority" and met with high teacher expectations, it is possible that later-generation students may be more aware of and thus more likely to react against this perceived stereotype by developing more negative attitudes toward schooling. These arguments are admittedly speculative, but serve as examples of factors beyond acculturation into negative peer cultures that should be explored in trying to understand generational declines in educational attitudes for immigrant students.

Overall, the findings of this study provide mixed evidence as to the importance of acculturation as an explanation for generational declines in educational outcomes. On the one hand, the fact that peer attitudes toward education are more strongly correlated with the

attitudes of later-generation than earlier-generation immigrants suggests that some degree of acculturation into negative peer attitudes may be occurring. The findings also confirmed results from previous studies that have shown that immigrants' children have both more positive educational outcomes and better educational attitudes and behaviors than children of natives. However, generational differences in attitudes and behaviors account for little of the generational declines in educational outcomes. It is possible that the results would have differed if other measures of educational attitudes or behaviors had been used. For example, the belief that success in school comes primarily from effort rather than from natural ability has been suggested as an explanation for immigrant students' success (Steinberg 1996). Future research should test the role of other attitudes, particularly those shown by past research to be common positive orientations among immigrants. In the meantime, it is important to avoid over-emphasizing acculturation as an explanation for generational differences in educational outcomes.

Acknowledgments

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Appendix. Generational differences in key variables, by race/country of origin

		Asian			Mexican			White
		1st Gen	**2nd Gen**	**3rd Gen**	**1st Gen**	**2nd Gen**	**3rd Gen**	**3rd Gen**
High School Graduation								
(In-home, Wave 3)	Mean	0.91	0.90	0.90	0.68	0.68	0.72	0.82

		Asian			Mexican			White
		1st Gen	**2nd Gen**	**3rd Gen**	**1st Gen**	**2nd Gen**	**3rd Gen**	**3rd Gen**
	N	429	429	162	186	532	407	6971
	Minimum	0	0	0	0	0	0	0
	Maximum	1	1	1	1	1	1	1
College Prep Courses								
(Transcript data)	Mean	3.15	3.06	2.67	2.29	2.02	2.00	2.59
	N	351	349	146	136	390	297	5808
	Minimum	0	0	0	0	0	0	0
	Maximum	4	4	4	4	4	4	4
College Enrollment								
(In-home, Wave 3)	Mean	0.81	0.82	0.72	0.37	0.49	0.45	0.63
	N	429	429	162	186	532	407	6971
	Minimum	0	0	0	0	0	0	0
	Maximum	1	1	1	1	1	1	1
GPA								
(Transcript data)	Mean	2.74	2.66	2.62	2.12	1.96	1.97	2.4
	N	355	351	146	137	390	298	5827
	Minimum	0	0.25	0	0	0	0	0
	Maximum	4	4	4	3.96	4	4	4
Attitudes toward school								
(In-home, Wave 1)	Mean	32.0	31.2	30.9	32.0	30.6	30.0	30.5
	N	581	523	183	255	656	518	8812
	Minimum	16	14	17	14	14	8	8
	Maximum	40	40	40	40	40	40	40
Maximum effort at school								
(In-school)	Mean	0.53	0.48	0.32	0.45	0.42	0.43	0.36
	N	465	420	149	152	450	330	6870
	Minimum	0	0	0	0	0	0	0
	Maximum	1	1	1	1	1	1	1
Rarely skips school								
(In-home, Wave 1)	Mean	0.83	0.79	0.79	0.75	0.68	0.75	0.81
	N	580	524	184	257	652	519	8811
	Minimum	0	0	0	0	0	0	0
	Maximum	1	1	1	1	1	1	1
Mean school peer attitudes								
(In-home, Wave 1)	Mean	29.7	29.9	30.1	30.3	30.3	29.9	29.9
	N	581	523	183	255	656	518	8812
	Minimum	26.3	26.3	26.4	27.4	27.4	26.3	26.3

		Asian			Mexican		White
	1st Gen	2nd Gen	3rd Gen	1st Gen	2nd Gen	3rd Gen	3rd Gen
Maximum	33.5	32.7	31.5	33.5	33.6	33.8	34.3

i. Bivariate (total) effect of generation on educational outcomes

```
┌──────────────┐                                          ┌──────────────┐
│              │                 A* (-)                   │ Educational  │
│ Generation   │─────────────────────────────────────────▶ Outcomes     │
│              │                                          │              │
└──────────────┘                                          └──────────────┘
```
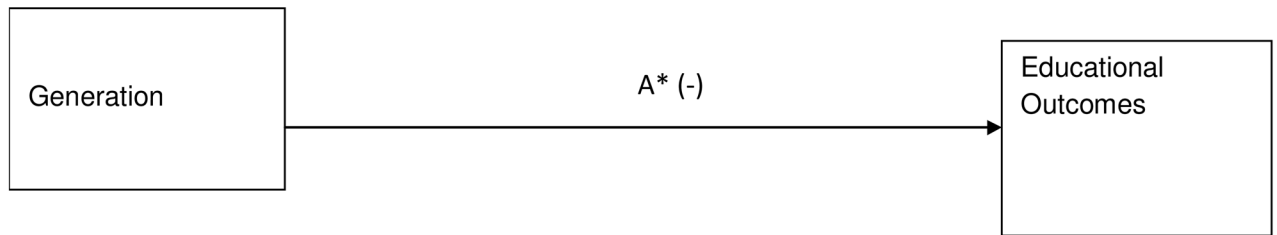
ii. Effect of generation mediated through educational attitudes and behaviors

```
┌──────────────┐                 A (-)                    ┌──────────────┐
│              │─────────────────────────────────────────▶ Educational  │
│ Generation   │                                          │ Outcomes     │
│              │                                          │              │
└──────┬───────┘                                          └──────────────┘
       │                                                         ▲
  B (-)│                                                         │ C (+)
       │          ┌────────────────────────┐                    │
       └─────────▶│ Positive Educational   │────────────────────┘
                  │ Attitudes and          │
                  │ Behaviors              │
                  └────────────────────────┘
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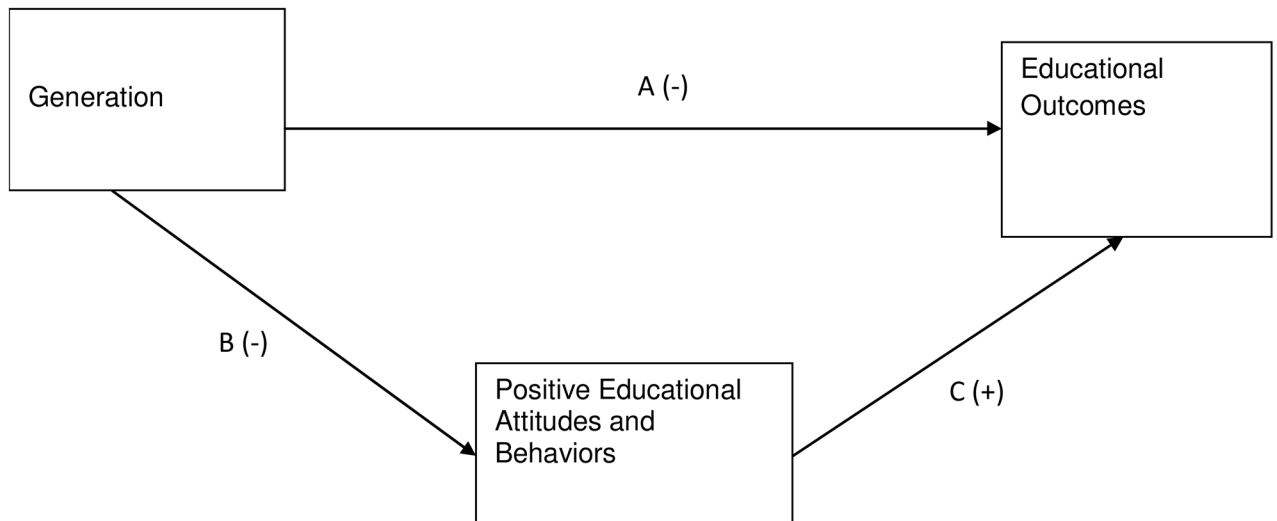
iii. Effect of generation on attitudes/behaviors differs according to peer context
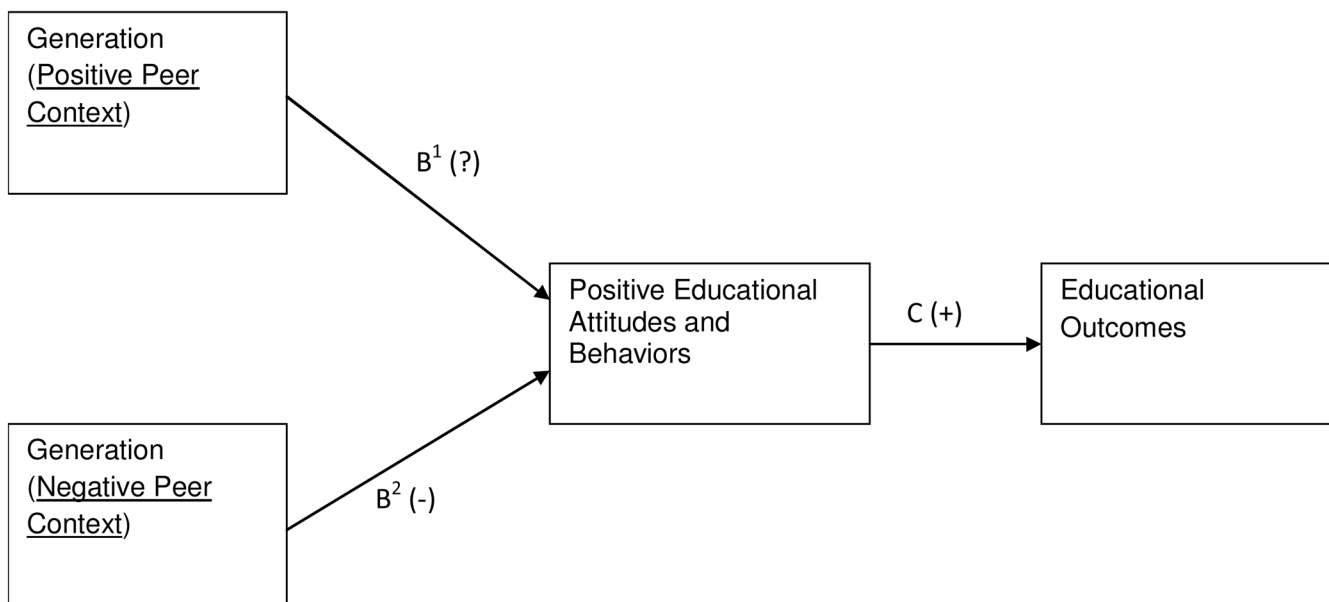
Figure 1.
Conceptual model of effect of direct and indirect effects of immigrant generation on educational outcomes.

Table 1

Mexican generational differences in attitudes and behaviors, relative to 3rd-plus generation whites

	Attitude toward School[1]				Maximum effort at schoolwork				Rarely skips school[2]			
	(1)		(2)		(1)		(2)		(1)		(2)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Generation 1	1.47	0.47 **	2.29	0.48 ***	0.38	0.18 *	0.56	0.22 *	−0.37	0.26	0.32	0.28
Generation 2	0.13	0.39	0.60	0.41	0.30	0.16 +	0.31	0.20	−0.69	0.24 **	−0.47	0.23 *
Generation 3	−0.46	0.39	−0.20	0.38	0.30	0.21	0.31	0.20	−0.33	0.16 *	−0.30	0.15 *
Age			−0.21	0.05 ***			−0.22	0.02 ***			−0.42	0.03 ***
Female			0.70	0.16 ***			0.33	0.07 ***			0.34	0.07 ***
Single-parent family			−1.53	0.15 ***			−0.22	0.07 **			−0.66	0.08 ***
Step-parent family			−0.69	0.18 ***			−0.16	0.09 +			−0.34	0.11 **
Family income			−0.08	0.06			−0.05	0.02 *			0.04	0.04
Income imputed			−0.44	0.25 +			−0.24	0.12 +			−0.36	0.10 ***
Avg parental education			0.16	0.03 ***			0.01	0.02			0.09	0.02 ***
Constant	30.50	0.12 ***	32.69	1.15 ***	−0.60	0.06 ***	3.26	0.56 ***	1.44	0.08 ***	6.87	0.73 ***
N	10198		10198		7775		7775		10196		10196	
R2/Pseudo R2	0.002		0.035		0.001		0.037		0.004		0.118	
Mexican Generational Differences	a, b		a, b								a, b	

[1] OLS coefficients

[2] Logistic regression coefficients

[a] First and third generations different at the .05 level

[b] First and second generations different at the .05 level

[c] Second and third generations different at the .05 level

Statistical Significance:

+ p<0.1

* p<.05

**
$p < .01$

***
$p < .001$

Table 2

Asian Generational differences in attitudes and behavior relative to 3rd-plus generation whites

	Attitude toward School[1]				Maximum effort at schoolwork[2]				Rarely skips school[2]			
	(1)		(2)		(1)		(2)		(1)		(2)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Generation 1	1.45	0.29 ***	1.31	0.33 ***	0.72	0.21 ***	0.89	0.24 ***	0.12	0.21	0.22	0.23
Generation 2	0.74	0.60	0.46	0.53	0.53	0.20 **	0.60	0.22 **	-0.14	0.32	-0.33	0.34
Generation 3	0.38	0.45	0.08	0.51	-0.14	0.15	-0.17	0.17	-0.13	0.33	-0.50	0.37
Age			-0.23	0.05 ***			-0.23	0.02 ***			-0.43	0.03 ***
Female			0.73	0.16 ***			0.35	0.07 ***			0.32	0.07 ***
Single-parent family			-1.45	0.15 ***			-0.20	0.07 **			-0.66	0.09 ***
Step-parent family			-0.68	0.20 ***			-0.16	0.09 +			-0.32	0.11 **
Family income			-0.09	0.05 +			-0.05	0.03 *			0.03	0.04
Income imputed			-0.32	0.24			-0.16	0.12			-0.35	0.11 **
Avg parental education			0.16	0.04 ***			0.01	0.02			0.10	0.02 ***
Asian Ethnicity B			0.51	0.65			-0.05	0.29			0.54	0.27 *
Constant	30.50	0.12 ***	33.00	1.16 ***	-0.60	0.06 ***	3.28	0.52 ***	1.44	0.08 ***	6.87	0.78 ***
N	10058		10058		7879		7879		10058		10058	
R2/Pseudo R2	0.00		0.03		0.00		0.04		0.00		0.12	
Asian Generational Differences:	a		a		a, c		a, c				a, b	

[1] OLS coefficients

[2] Logistic regression coefficients

[a] First and third generations different at the .05 level

[b] First and second generations different at the .05 level

[c] Second and third generations different at the .05 level

Statistical Significance:

+ p<0.1

*
p< .05

**
p< .01

***
p<.001

Table 3

Mexican generational differences in educational outcomes, relative to 3rd-plus generation whites

Independent Variables:	High School Graduation[2]						College Prep Coursework[1]					
	(1)		(2)		(3)		(1)		(2)		(3)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Generation 1	−0.79	0.27 **	0.29	0.34	0.08	0.35	−0.32	0.25	0.55	0.25 *	0.44	0.25 +
Generation 2	−0.69	0.23 **	0.10	0.24	0.13	0.25	−0.55	0.19 **	0.04	0.20	0.08	0.18
Generation 3	−0.60	0.19 **	−0.25	0.20	−0.18	0.22	−0.58	0.14 ***	−0.31	0.13 *	−0.30	0.13 *
Age			0.08	0.02 ***	0.16	0.03 ***			0.01	0.02	0.05	0.02 *
Female			0.36	0.08 ***	0.26	0.08 ***			0.32	0.05 ***	0.27	0.04 ***
Single-parent family			−0.66	0.12 ***	−0.49	0.13 ***			−0.36	0.05 ***	−0.25	0.05 ***
Step-parent family			−0.44	0.11 ***	−0.38	0.11 ***			−0.23	0.07 ***	−0.20	0.06 **
Family income			0.09	0.05 +	0.09	0.05 *			0.06	0.02 *	0.06	0.02 *
Parent Interview Missing			−0.10	0.15	−0.01	0.15			−0.10	0.08	−0.05	0.08
Avg parental education			0.24	0.03 ***	0.23	0.02 ***			0.17	0.01 ***	0.16	0.01 ***
Attitudes Scale					0.07	0.01 ***					0.04	0.00 ***
Rarely skips school					0.79	0.09 ***					0.43	0.06 ***
Constant	1.57	0.08 ***	−3.67	0.66 ***	−7.49	0.79 ***	2.61	0.05 ***	−0.50	0.47	−2.63	0.47 ***
N	7902		7902		7902		6493		6493		6493	
R2/Pseudo R2	0.01		0.07		0.12		0.01		0.12		0.17	
Mexican Generational Differences							a, c		a, c		a, c	

Independent Variables:	College Enrollment[2]						GPA[1]					
	(1)		(2)		(3)		(1)		(2)		(3)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Generation 1	−1.09	0.24 ***	0.60	0.31 *	0.48	0.32	−0.30	0.13 *	0.30	0.13 *	0.23	0.15
Generation 2	−0.52	0.21 *	0.78	0.21 ***	0.83	0.21 ***	−0.42	0.08 ***	−0.01	0.09	0.02	0.09
Generation 3	−0.72	0.17 ***	−0.27	0.17	−0.23	0.18	−0.45	0.08 ***	−0.26	0.07 ***	−0.25	0.07 ***

Independent Variables:	College Enrollment[2]						GPA[1]					
	(1)		(2)		(3)		(1)		(2)		(3)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Age			0.06	0.02 *	0.11	0.02 ***			-0.01	0.01	0.01	0.01
Female			0.48	0.07 ***	0.42	0.07 ***			0.37	0.03 ***	0.34	0.03 ***
Single-parent family			-0.71	0.09 ***	-0.59	0.09 ***			-0.30	0.04 ***	-0.22	0.03 ***
Step-parent family			-0.70	0.11 ***	-0.68	0.11 ***			-0.18	0.04 ***	-0.15	0.04 ***
Family income			0.15	0.06 **	0.16	0.05 **			0.03	0.02 +	0.04	0.02 +
Income imputed			-0.12	0.12	-0.04	0.11			-0.12	0.05 *	-0.07	0.05
Avg parental education			0.40	0.02 ***	0.40	0.02 ***			0.11	0.01 ***	0.11	0.01 ***
Attitudes Scale					0.06	0.01 ***					0.03	0.00 ***
Rarely skips school					0.57	0.09 ***					0.31	0.04 ***
Constant	0.56	0.08 ***	-7.11	0.69 ***	-10.19	0.76 ***	2.42	0.03 ***	0.69	0.29 *	-0.98	0.27 ***
N	7902		7902		7902		6515		6515		6515	
R2/Pseudo R2	0.01		0.15		0.18		0.02		0.17		0.24	
Mexican Generational Differences			a, c		a, c				a, b, c		a, c	

[1] OLS coefficients

[2] Logistic regression coefficients

[a] First and third generations significantly different

[b] First and second generations significantly different

[c] Second and third generations significantly different

Statistical Significance:

+ p<0.1

* p< .05

** p< .01

*** p<.001

Table 4

Asian generational differences in educational outcomes, relative to 3rd-plus generation whites

Independent Variables:	High School Graduation[2]						College Prep Coursework[1]					
	(1)		(2)		(3)		(1)		(2)		(3)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Generation 1	0.75	0.36 *	1.14	0.44 **	0.96	0.44 *	0.56	0.15 ***	0.44	0.15 **	0.36	0.15 *
Generation 2	0.62	0.34 +	0.70	0.42 +	0.67	0.44	0.43	0.14 **	0.28	0.12 *	0.27	0.12 *
Generation 3	0.73	0.32 *	0.64	0.36 +	0.78	0.35 *	0.09	0.37	−0.06	0.36	−0.03	0.34
Age			0.09	0.03 ***	0.17	0.03 ***			0.01	0.02	0.05	0.02 **
Female			0.41	0.08 ***	0.31	0.08 ***			0.32	0.05 ***	0.27	0.04 ***
Single-parent family			−0.71	0.13 ***	−0.55	0.13 ***			−0.36	0.06 ***	−0.26	0.06 ***
Step-parent family			−0.38	0.12 **	−0.33	0.11 **			−0.20	0.07 **	−0.17	0.07 **
Family income			0.08	0.05 +	0.09	0.05 +			0.07	0.03 *	0.07	0.03 *
Parent Interview Missing			−0.14	0.15	−0.05	0.15			0.00	0.07	0.05	0.07
Avg parental education			0.26	0.03 ***	0.24	0.03 ***			0.17	0.01 ***	0.16	0.01 ***
Asian Ethnicity B			−0.38	0.54	−0.50	0.54			0.36	0.22 +	0.31	0.22
Attitudes Scale					0.08	0.01 ***					0.04	0.00 ***
Rarely skips school					0.85	0.09 ***					0.48	0.06 ***
Constant	1.56	0.08 ***	−3.97	0.68 ***	−8.00	0.77 ***	2.61	0.05 ***	−0.57	0.49	−2.65	0.49 ***
N	7816		7816		7816		6531		6531		6531	
R2/Pseudo R2	0.00		0.08		0.13		0.01		0.12		0.17	
Asian Generational Differences												

Independent Variables:	College Enrollment[2]						GPA[1]					
	(1)		(2)		(3)		(1)		(2)		(3)	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
Generation 1	0.86	0.26 ***	1.44	0.33 ***	1.35	0.34 ***	0.32	0.10 ***	0.32	0.11 **	0.26	0.11 *
Generation 2	0.98	0.30 **	1.07	0.41 **	1.07	0.39 **	0.23	0.09 *	0.18	0.11	0.17	0.11
Generation 3	0.42	0.41	0.22	0.48	0.31	0.47	0.21	0.14	0.11	0.13	0.14	0.12

Independent Variables:	College Enrollment[2] (1) coef	se	(2) coef	se	(3) coef	se	GPA[1] (1) coef	se	(2) coef	se	(3) coef	se
Age			0.05	0.02 *	0.11	0.03 ***			-0.02	0.01 +	0.01	0.01
Female			0.53	0.07 ***	0.47	0.07 ***			0.39	0.03 ***	0.35	0.03 ***
Single-parent family			-0.76	0.09 ***	-0.64	0.09 ***			-0.32	0.04 ***	-0.23	0.03 ***
Step-parent family			-0.66	0.12 ***	-0.64	0.12 ***			-0.17	0.04 ***	-0.14	0.04 ***
Family income			0.15	0.06 *	0.15	0.06 **			0.04	0.02 +	0.04	0.02 +
Income imputed			-0.10	0.12	-0.02	0.12			-0.05	0.05	-0.01	0.05
Avg parental education			0.41	0.02 ***	0.40	0.02 ***			0.11	0.01 ***	0.11	0.01 ***
Asian Ethnicity B			-0.38	0.44	-0.45	0.45			0.09	0.18	0.05	0.18
Attitudes Scale					0.06	0.01 ***					0.03	0.00 ***
Rarely skips school					0.68	0.10 ***					0.36	0.04 ***
Constant	0.56	0.08 ***	-7.14	0.73 ***	-10.44	0.79 ***	2.42	0.03 ***	0.70	0.31 *	-1.05	0.28 ***
N	7816		7816		7816		6557		6557		6557	
R2/Pseudo R2	0.01						0.01		0.18		0.25	
Asian Generational Differences			a, c		a							

[1] OLS coefficients

[2] Logistic regression coefficients

[a] First and third generations significantly different

[b] First and second generations significantly different

[c] Second and third generations significantly different

Statistical Significance:

[+] p<0.1

[*] p< .05

[**] p<.01

[***] p<.001

Table 5

Effects of school peer attitudes on individual attitudes - Mexicans (relative to 3rd-plus generation whites)

| | Attitudes toward school (Wave 1) | | | | Change in attitudes from Wave 1 to Wave 2 | | | |
| | (1) | | (2) | | (1) | | (2) | |
	coef	se	coef	se	coef	se	coef	se
Wave 1 attitudes	--	--	--	--	−0.43	0.01 ***	−0.43	0.01 ***
Generation 1	0.96	8.53	0.82	8.47	20.04	9.38 *	19.93	9.38 *
Generation 2	16.86	6.73 *	18.42	6.71 **	−5.29	6.94	−4.08	6.94
Generation 3	−5.09	5.40	−5.03	5.36	0.53	6.02	0.32	6.02
Mean peer attitudes	0.66	0.04 ***	0.58	0.04 ***	0.09	0.05 +	0.13	0.05 **
Gen 1 * Peer att	0.00	0.28	0.03	0.28	−0.63	0.31 *	−0.62	0.31 *
Gen 2 * Peer att	−0.55	0.22 *	−0.59	0.22 **	0.17	0.23	0.13	0.23
Gen 3 * Peer att	0.15	0.18	0.16	0.18	−0.02	0.20	−0.01	0.20
Age			−0.07	0.03 *			0.17	0.03 ***
Female			0.70	0.10 ***			0.08	0.09
Single-parent family			−1.25	0.12 ***			−0.35	0.12 **
Step-parent family			−0.77	0.13 ***			−0.21	0.14
Family income			0.00	0.05			−0.02	0.05
Income imputed			−0.42	0.15 **			0.08	0.17
Avg parental education			0.10	0.02 ***			0.02	0.02
Constant	10.84	1.23 ***	13.27	1.30 ***	10.48	1.51 ***	9.31	1.56 ***
N of students (Level 1)	10917		10917		7186		7186	
N of schools (Level 2)	131		131		131		131	
Wald Chi-square	311.12		529.91		2004.63		2049.09	
Mexican Generational Differences:	c		c		b		b	

Note: Coefficients are from multi-level models with school peer attitudes included as a Level 2 predictor

Statistical Significance:

+ p<0.1

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*
p< .05

**
p< .01

***
p<.001

[a] Effect of school peer attitudes sgnficiantly different for 1st and 3rd generations at the .05 level

[b] Effect of school peer attitudes sgnficiantly different for 1st and 2nd generations at the .05 level

[c] Effect of school peer attitudes sgnficiantly different for 2nd and 3rd generations at the .05 level

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Table 6

Effects of school peer attitudes on individual attitudes - Asians (relative to 3rd-plus generation whites)

	Attitudes toward school (Wave 1)				Change in attitudes from Wave 1 to Wave 2			
	(1)		(2)		(1)		(2)	
	coef	se	coef	se	coef	se	coef	se
Wave 1 attitudes	--	--	--	--	-0.43	0.01 ***	-0.43	0.01 ***
Generation 1	25.43	7.48 ***	22.13	7.52 **	13.06	7.27 +	11.87	7.38
Generation 2	4.67	7.92	0.59	8.07	4.09	7.74	3.83	7.87
Generation 3	-10.23	13.84	-10.35	13.83	-5.29	16.55	-4.70	16.63
Mean peer attitudes	0.66	0.04 ***	0.55	0.04 ***	0.09	0.05 +	0.12	0.05 *
Gen 1 * Peer att	-0.82	0.25 **	-0.71	0.25 **	-0.42	0.24 +	-0.39	0.25
Gen 2 * Peer att	-0.12	0.26	0.01	0.27	-0.14	0.26	-0.13	0.26
Gen 3 * Peer att	0.35	0.46	0.35	0.46	0.18	0.55	0.16	0.55
Age			-0.12	0.03 ***			0.13	0.03 ***
Female			0.66	0.10 ***			0.07	0.09
Single-parent family			-1.14	0.12 ***			-0.31	0.12 **
Step-parent family			-0.67	0.13 ***			-0.20	0.14
Family income			-0.02	0.05			0.01	0.05
Income imputed			-0.29	0.15 +			-0.10	0.16
Avg parental education			0.10	0.02 ***			0.05	0.02 *
Asian Ethnicity B			0.64	0.36 +			0.35	0.37
Constant	10.84	1.21 ***	13.97	1.33 ***	10.67	1.47 ***	9.96	1.55 ***
N of students (Level 1)	10127		10127		7116		7116	
N of schools (Level 2)	130		130		130		130	
Wald Chi-square	318.87		483.48		1977.70		2012.94	
Asian Generational Differences:	a		a, b					

Note: Coefficients are from multi-level models with school peer attitudes included as a Level 2 predictor

Statistical Significance:

+
p<0.1

*
p< .05

**
p< .01

***
p<.001

[a]Effect of school peer attitudes signficiantly different for 1st and 3rd generations at the .05 level

[b]Effect of school peer attitudes signficiantly different for 1st and 2nd generations at the .05 level

[c]Effect of school peer attitudes signficiantly different for 2nd and 3rd generations at the .05 level