

**AIR/NCES/NSF/NPEC Grant**

**FINAL REPORT**

**Grant # 07-409**

**The Effects of Schools on the Educational Expectations of Children of Immigrants**

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**I. Paper based on project findings (attached)**

Attached to the end of this report is a paper entitled “Children of Immigrants and Educational Expectations: The Roles of School Composition.” This paper is based entirely on findings from the project funded by this grant.

**II. Conference presentations based on grant funding**

Wells, R. (2008, August). *Do all immigrant students have high educational expectations? Exploring generational status, race/ethnicity, and SES*. Paper presented at the American Sociological Association (ASA) Annual Conference, Boston, MA.

Wells, R. (2008, May). *The effects of high school composition on the college expectations of children of immigrants*. Paper presented at the Association for Institutional Research (AIR) Annual Forum, Seattle, WA.

Wells, R. (2007, November). *School composition and educational expectations: Are children of immigrants affected differently?* Paper presented at the Association for the Study of Higher Education (ASHE), Louisville, KY.

**III. Papers in press and under review based on grant funding**

Wells, R. (In press). Children of immigrants and educational expectations: The roles of school composition. *Teacher's College Record*.

Wells, R. Segregation and immigration: An exploration of immigrant students' school compositions. *Equity and Excellence in Education*. (Under review)

#### **IV. Financial accounting of funding expenditures**

All funding was distributed to PI Ryan Wells via the University of Iowa, and all was used to pay education-related expenses (tuition, dissertation expenses, etc).

#### **V. Demographic information about individuals funded under the grant**

Ryan Wells was the only individual funded under the grant. (male, white, US citizen, no disability)

# Children of Immigrants and Educational Expectations: The Roles of School Composition

Ryan Wells

## Abstract

As immigration grows in the U.S., educators and policymakers must understand how the educational processes for children of immigrants differ from nonimmigrants. Because expectations for higher education are a necessary, though insufficient, step toward college attendance and degree attainment, and because students have these attitudes influenced by the schools they attend, I examine high school composition for its effects on expectations. Specifically, I examine the effect that the proportion of children of immigrants in a school has on all students' expectations, and also examine the differential effects of school composition on the expectations of children of immigrants compared to nonimmigrants. Results show that children of immigrants are affected differently by school composition than are nonimmigrants, and in ways that contradict commonly accepted theoretical views.

## Children of Immigrants and Educational Expectations: The Roles of School Composition<sup>1</sup>

Ryan Wells

In a 2006 address to the Association for the Study of Higher Education (ASHE), global immigration expert Marcelo Suárez-Orozco stated: “In the United States, immigration is both history and destiny” (Suárez-Orozco, 2006). With immigration as an integral part of the fabric of American society, the success of immigrants and their children is vital to the country, and to these individuals’ well-being. In today’s society this success is one that often depends on the completion of higher education, and increasingly on the completion of advanced higher education degrees.

However, many children of immigrants are not enrolled in high schools that sufficiently meet their needs (Ruiz-de-Velasco & Fix, 2000), and subsequently many are not making a successful transition to, and/or completion of, higher education (Erisman & Looney, 2007).<sup>2</sup> Students’ expectations for higher education while in high school are important because without initially high expectations, the path toward a college degree is nearly impossible. In response to the challenge of preparing students for higher education in a society with an increasing and increasingly diverse population of children of immigrants, this study examines the effects of high school composition on educational expectations.

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<sup>1</sup> This material is based upon work supported by the Association for Institutional Research, the Institute of Education Sciences-National Center for Education Statistics, and the National Science Foundation under Association for Institutional Research Grant Number 07-409. A previous version of this paper was presented at the ASHE Annual Conference in Louisville, KY in November, 2007. The author would like to thank David Bills, Mary Noonan, Ernest Pascarella, Mike Paulsen, and Paul Umbach for helpful comments on previous versions of this paper.

<sup>2</sup> I use the terms “children of immigrants” and “immigrant students” interchangeably to refer to both first- and second-generation immigrant students.

The proportion of children of immigrants is increasing in the U.S. (Morse, 2002; Portes & Rumbaut, 2006), and immigrant populations are extending to parts of the country that have not traditionally seen large numbers of immigrants (U.S. Census Bureau, 2005). Therefore, one aspect of this study examines the effect that a school's composition of children of immigrants has on all students' educational expectations. This is a valuable extension of past studies which examined racial and socioeconomic composition, but which neglected the influence that the collective immigrant composition may have.

This study also examines the ways that school composition (based on race/ethnicity, SES, and ability) may affect the expectations of children of immigrants differently than nonimmigrants. In other words, in addition to studying the compositional effects of children of immigrants on all students' expectations, I also examine the differential effects of school composition on the expectations of children of immigrants compared to nonimmigrants. Formally, this study is based on two overarching research questions:

- How do the immigrant compositions of U.S. secondary schools affect the educational expectations of all students?
- How do the compositions of U.S. secondary schools affect the educational expectations of children of immigrants differently than nonimmigrant students?

## Theoretical Framework and Prior Research

### *Individual educational expectations and children of immigrants*

Student educational expectations are good predictors of eventual educational attainment, which in turn is a predictor of occupational and overall status attainment (Sewell, Haller, & Ohlendorf, 1970; Sewell, Haller, & Portes, 1969). Higher education research has recognized

student expectations as a vital first step in the college choice process. A “predisposition” to higher education (Hossler, Braxton, & Coopersmith, 1989; Hossler & Gallagher, 1987), necessarily including high expectations, has been modeled as the first component of a successful navigation of college requirements, applications, financial aid, enrollment, attendance, persistence, and eventual degree attainment. The “path to college” (Cabrera & La Nasa, 2001), or “pipeline to higher education” (Horn & Carroll, 1997), recognizes the expectation of college as a critical initial part of the choice process.

Although there are many individual benefits to higher education, for students on the margins of college entry the decision can be perplexing. Researchers have examined the ways that the college choice process differs for low-SES students as well as racial/ethnic minority students (Paulsen & St. John, 2002; Perna & Titus, 2005; St. John, Paulsen, & Carter, 2005). One may assume that immigration status, as another way that our society confers privilege (or conversely, disadvantage), may be an additional factor by which these processes differ.

Unique barriers faced by children of immigrants include varied educational backgrounds, the age of entry into school, cultural conflicts, differing amounts of parental involvement, the possible need to work to support the family, mobility issues especially for migrant working families, and/or the psychological adjustment to a new culture and a new school (Gonzalez, 2005). Immigrant families may also face barriers based on socioeconomic status, legal status, or reception by the native population (Lopez & Stanton-Salazar, 2001), which is related to the “mode of incorporation” (Portes & Rumbaut, 2006) or the “ethos of reception” (Suárez-Orozco & Suárez-Orozco, 2001). Additional barriers for children of immigrants may include a lack of understanding of the U.S. higher education system and the transition to it, low English-proficiency, and racism (Behnke, Piercy, & Diversi, 2004). For ELL immigrant students, the

barriers associated with becoming proficient and fluent in English affect attitudes and educational outcomes, and school climates may exacerbate these challenges (Valdés, 1998). Many immigrant students also attempt to form their expectations about college in an isolating school environment with limited access to institutional supports (Lew, 2004). This study of expectations for children of immigrants seeks to understand more fully the first stage of the college choice process for this important group of potential higher education students given these challenges.

Theoretical views suggest mechanisms by which children of immigrants may be affected differently in their expectation-formation processes than nonimmigrants. Assimilation theory posits that as immigrant students are socialized by the majority student group, over time, due largely to in-school contact, their expectations tend to align more closely with that of the dominant group. Recent modifications of assimilation theory propose that immigrant students may assimilate to particular segments of American-born youth depending on characteristics of the student, the native-born group, and the environment (Portes & Rumbaut, 2006; Portes & Zhou, 1993; Rumbaut & Portes, 2001). Segmented assimilation implies that children of immigrants may develop expectations differently based on the peers they interact with in school – i.e., the school composition.

Several theories propose that children of immigrants will have higher initial educational expectations than their native-born counterparts. Some scholars claim that immigrant students may have higher expectations due to a positive self-selection effect (Portes & Rumbaut, 2006). Kao & Tienda (1995) based their study of immigrant students' expectations on the concept of "immigrant optimism." Essentially, children of immigrants are significantly influenced by the

optimism of parents who likely came to the United States in search of a better life and the elusive American Dream and, therefore, also have higher average expectations.

A study examining immigration and family life among Latino adolescents in Mexico and the U.S. presents a theory of “achievement motivation” which is closely connected to educational expectations (Suárez-Orozco & Suárez-Orozco, 1995). Students who immigrated to the U.S. while other family members remained in the country of origin often felt feelings of guilt. This guilt may be rooted in ideas that loved ones had sacrificed for them, that they were selected over others that were left behind, and that they enjoyed opportunities that those others did not. “Among achievement-oriented Central American youths we found feelings of desperation giving way to a determination to seize upon any opportunity in the affluent society” (Suárez-Orozco & Suárez-Orozco, 1995, p. 79). Among the opportunities to be seized may be the reward of higher education, and immigrant students’ expectations may fall in line with this guilt-induced motivation. Studies that have examined the educational expectations of immigrants have generally supported these concepts and have found that children of immigrants have high expectations for higher education, most often higher than nonimmigrant peers (Goyette & Xie, 1999; Hao & Bronstead-Bruns, 1998; Portes & Rumbaut, 2001; Rumbaut & Portes, 2001; St. Hilaire, 2002).

There is some evidence, however, that these higher expectations may be lowered over time. Whether specific immigrant students are examined over time (Valdés, 1998; Valenzuela, 1999) or students of different immigrant generations are compared (Lee, 2005; Suárez-Orozco & Suárez-Orozco, 1995), there is evidence to believe that expectations lower, perhaps due to processes of assimilation. Others explain initially high expectations that may be lowered over time based on limited resources for some groups of immigrant students, such as Mexican-origin

students, and expectations that are formed based on differing amounts of information (Lopez & Stanton-Salazar, 2001). Of course, immigrant students are internally diverse in terms of gender, SES, and race/ethnicity, and these factors may affect educational outcomes differentially within the immigrant population (Gans, 1992; Lew, 2004; Lopez, 2003; Portes & Rumbaut, 2001; Waters, 1999), and must be taken into account.

Studies of school effects on immigrants' expectations specifically are rare and lack the methodological rigor to draw clear conclusions. Those that do exist most often do not contain a nonimmigrant cohort for comparison purposes. Nevertheless, since school effects have been shown to differ for students based on socioeconomic status, race/ethnicity, and/or gender (Carter, Fernández, & Locks, 2006; Hamrick & Stage, 1998; Lopez, 2003; Meyer, 1970), since theoretical considerations point to likely differentiation in expectation formation for children of immigrants, and since immigrants of any race/ethnicity, gender, or SES face barriers that nonimmigrants do not, one may assume that school composition effects on expectations also differ based on immigrant status.

#### *School compositional effects on expectations*

School effects can refer to many different characteristics of schools. "The school likely matters in two general ways: 1) as a point of access to institutional resources, such as the money, programs, and services transferred from the state to individual through schools; and 2) as contexts of social relations with unique norms, values, and cultures" (Crosnoe & Lopez-Gonzalez, 2005, p. 20). I include controls for the former, but concentrate on the latter. I primarily examine the effects of *who* is in a students' school rather than how the school operates. In other words: "School composition 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" (Portes & Hao, 2004, p. 11920).

The economic and social contexts and compositions of schools is one factor that affects students' educational expectations, and this is clearly true for children of immigrants (Lew, 2004; Rumbaut & Cornelius, 1995; Suárez-Orozco & Suárez-Orozco, 1995, 2001). Past literature concerning the ways that school composition, or the school "mix," affects students has primarily focused on factors such as race/ethnicity, school-SES, and school-achievement. Most recent studies of school effects examine outcomes other than expectations, such as school effectiveness or student achievement (e.g., Bryk, Lee, & Holland, 1993; Gamoran, 1996; Morgan & Sorensen, 1999; e.g., Rumberger & Palardy, 2005b; Zimmer & Toma, 2000).

The racial/ethnic composition of schools has been examined in many ways, most often looking at issues of racial/ethnic segregation (Caldas & Bankston, 1998; Clotfelter, 2006; Frankenberg, Lee, & Orfield, 2003; Orfield & Lee, 2007). Portes & Hao (2004) specifically studied these and other factors for immigrant students specifically. Other scholars argue that a school's social class may be a more influential factor for student educational outcomes (Kahlenberg, 2001). Several studies confirm that some form of school-SES is significant for students' educational experiences (Bryk et al., 1993; Rumberger & Palardy, 2005a, 2005b; Zimmer & Toma, 2000).

The literature concerning school composition for educational expectations specifically, is less extensive. The two most common theories of school characteristics affecting expectations concern normative and comparative effects. A normative view posits that "positive" characteristics of the school (such as high aggregate SES) affect the expectations of students positively due primarily to a socialization effect: since high-SES students generally have higher

expectations, this expectation or feeling of entitlement may become the normative view for all students. Most empirical results support the positive association that a normative theory proposes between school-SES and expectations (Frost, 2007; Khattab, 2005; Meyer, 1970; Shavit & Williams, 1985).

In contrast to the normative view, a comparative view posits that schools with “positive” characteristics (such as high aggregate ability) may produce a competitive environment which leads to lower expectations for the average student. This is known as the “frog pond” effect (Davis, 1966). Studies of this “frog pond” effect generally support the comparative theory of school effects and have found a negative association between aggregate ability of the school and individual expectations (Alwin & Otto, 1977; Khattab, 2005; Marsh, 1991; Meyer, 1970; Shavit & Williams, 1985).<sup>3</sup> For both of these effects, however, there have been researchers that, although they found statistically significant school effects, claimed that school effects in general were trivial or inconsequential (Alexander & Eckland, 1975; Alwin & Otto, 1977).

Studying composition effects for expectations also includes the racial/ethnic makeup of schools. Several theories lead to the conclusion that a school’s racial/ethnic minority composition is positively associated with educational expectations. One theoretical view assumes that resources, social networks, information, and opportunities are disproportionately in the realm of white, middle and upper class America and that isolation or segregation from these groups may result in barriers to success. Though clearly a disadvantage overall, this situation may paradoxically increase educational expectations. Isolation may lead to an overestimation of one’s status potential, due to a lack of one or more of the items above (Hoelter, 1982; Wilson, 1987). Related, segregated groups may not have to compete with the majority group and

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<sup>3</sup> One recent study in Texas found a positive association between expectations and the percentage of students meeting state testing standards (Frost, 2007).

therefore have a higher self image and higher related aspirations (Shavit & Williams, 1985; Yogev & Ilan, 1987).

High-minority schools are often schools with higher poverty rates and fewer resources. Under such circumstances, relative deprivation theory (Runciman, 1966) implies that those who have less than they deserve in relation to what they observe for others (such as middle-upper class white students in better funded schools) may raise their expectations as an attempt to get their fair share of resources and rewards. Another view assumes that since Black and Latino students, on average, have more positive attitudes about schooling and higher expectations, their higher proportions in a school would simply improve the normative climate of expectations for all students.

Goldsmith (2004) combines several theoretical positions to propose that schools with greater proportions of Black and Latino students will improve students' beliefs about school because: "1) they facilitate comparisons with low-achieving students; 2) they concentrate students with optimistic and pro-school attitudes, improving the climate; 3) they isolate students from information about what is required for academic and occupational success; and 4) they have many students who lack skills in using school feedback to establish realistic expectations" (p. 127). Goldsmith's four points apply equally well to immigrants and their expectations, regardless of their race/ethnicity. Therefore, the expectation-formation processes within schools may also be examined by considering the proportion of a student body consisting of children of immigrants rather than solely the racial/ethnic composition. Inclusion of this variable is useful because, theoretically, "if immigrants dominate the student body, then the culture of the school may still be tilted toward the nations of origin" (Crosnoe & Lopez-Gonzalez, 2005, p. 6). Based

on this extension of theoretical views based on race and ethnicity, I examine the effects of the immigrant composition of schools on educational expectations.

The immigrant composition of schools has been studied much less than racial/ethnic composition. Immigrant composition has been found to negatively impact rates of course failure for immigrant students (i.e., it was a positive effect for the student) (Crosnoe & Lopez-Gonzalez, 2005) and has been positively related to 5<sup>th</sup> grade test scores in New York City (Schwartz & Gershberg, 2000). Although the immigrant composition of schools has been a significant factor in past research, it has not been studied as a determinant of educational expectations.

Rumberger & Palardy (2005b) recently asked if there were differences in school compositional effects on achievement depending on the characteristics of the student. I ask a similar question about educational expectations, for immigrant students specifically. Broadly speaking then, this study emphasizes the “critical quantitative” dimension of research by using sociological processes “to demonstrate that for particular population groups, some widely accepted models and assumptions are inaccurate” (Stage, 2007, p. 10). It is rare that past theoretical development has differentiated between children of immigrants and nonimmigrants. Therefore, via the critical quantitative lens, I attempt to test theories of school composition and expectations for children of immigrants specifically. This type of challenge to homogenous approaches within educational research is important to uncover how marginalized groups of students may be affected differently than assumed.

The theories and past literature reviewed above lead to the following hypotheses:

1. Students in schools with higher proportions of immigrant students have higher expectations (based on a normative theory of expectations).
2. For children of immigrants...

- a. A school's aggregate SES and aggregate ability are more weakly associated with educational expectations for children of immigrants compared to nonimmigrants (based on resilient "immigrant optimism" such that high expectations are not as likely to be lowered in low-SES or high-ability schools)
- b. The proportion of a school's population that is racial/ethnic minority or that is children of immigrants is more strongly associated with educational expectations for children of immigrants compared to nonimmigrants (based on a normative theory of expectations and segmented assimilation theory).

## Methodology

### *Data and variables*

I utilize data from the Educational Longitudinal Study (ELS:2002/2004). From these data, I create a binary dependent variable indicating whether a 12<sup>th</sup> grade student expects to complete graduate or professional degree. Although expectations of a 4-year college degree are more common and are certainly worthy of attention, the attainment of a graduate or professional degree is increasingly the gateway to jobs in a post-industrial society that is experiencing credential inflation and increased enrollments of students competing for commodified degrees (Bills, 2004; Slaughter & Rhoades, 2004). A graduate degree, and therefore the expectation of that degree as a first step, is becoming increasingly important for status attainment and social mobility.

The main variable of interest at the student level is the "immigrant" dummy variable. For this study, "immigrant" is synonymous with "child of an immigrant." In other words, this study concerns any student who is either a first- or second-generation immigrant; either the student was

born in a foreign country and came to the U.S., or at least one of her/his parents was born in a foreign country. This categorization of immigrant students is purposefully broad for two reasons. First, “children of immigrants” is a useful distinction because, as Kao & Tienda (1995) explain, these students are significantly influenced by the optimism of immigrant parents who have high expectations, regardless of their own generational status (see also Suárez-Orozco & Suárez-Orozco, 2001). Second, to challenge theories of compositional effects on expectations, it is useful to begin with a relatively broad disaggregation such as this, prior to drilling into specific immigrant sub-populations.

This approach is valuable to give an overall understanding of the effects of school composition on immigrant students’ expectations, but it can be misleading if the results are used carelessly. This study is not representative of immigrant-receiving schools, nor of every state, some of which have high proportions of immigrants and some which have low proportions. Most of the data were gathered in 12<sup>th</sup> grade, after a disproportionately high percentage of racial minority and/or immigrant students have dropped out (or failed to drop in). In other words, this study gives an average national trend for children of immigrants, broadly defined, that were enrolled in 12th grade in 2004. Finer analyses for various subpopulations can and will be valuable, but this study is useful as a baseline and as an initial challenge to accepted theoretical views.<sup>4</sup>

At the level of the school, I included variables for aggregate student ability, aggregate socioeconomic status, racial composition (indicated by the proportion of Asian, Latino, and Black students in the school), and the proportion of the student body that is children of immigrants. I include a host of control variables at both levels, based on past literature. However,

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<sup>4</sup> For initial results concerning how expectations using these data differ by race, SES, and immigrant generation, contact the author, as these findings are beyond the scope of this article.

school “quality” may also affect students’ expectations, but these data do not have measures of quality similar to those used in past literature, and therefore I do not include a “quality” control variable. Complete descriptive data and descriptions of the way that each variable is operationalized are in Table A of the appendix.

Cases with complete data for the variables of interest are retained, resulting in an analytic sample of 10,851 students, including 1984 children of immigrants, at 747 schools. Missing data analyses comparing cases in my final sample to cases in the original sample, reveal that this study over-represent females, whites, high-SES students, and high-achieving students. They under-represent Asians, Latinos, Blacks, low-SES students, and low-achieving students. For children of immigrants specifically, the final sample under-represents Latinos, high-SES students, and high-achieving students, while it accurately represented the proportion of Asians, Blacks, and males/females. All of this information must be kept in mind when interpreting results.

### *Statistical Methods*

The purpose of this study is to analyze school characteristics for their effects on students’ educational expectations. Since the dependent variable (expectations) is at the student level, and the independent variables of interest (school composition) are at the school level, I employ hierarchical linear modeling (HLM). Because students clustered within schools are not statistically independent observations, regular regression techniques may underestimate the standard errors, which would lead to incorrect interpretations of statistical and substantive significance of the predictor variables (Ethington, 1997; Luke, 2004; Raudenbush & Bryk, 2002; Snijders & Bosker, 1999).

Multi-level regression models can utilize interaction variables much the same as non-multi-level regression. By interacting level-2 and level-1 variables I examine how expectations differ between sub-populations based on various school factors. Therefore, regression models with interaction variables indicate how children of immigrants are impacted differently by school composition factors than nonimmigrants. Consistent with recent literature (Enders & Tofighi, 2007; Raudenbush & Bryk, 2002), all variables are grand-mean centered for this study, with the one exception that in models using cross-level interactions to determine the differential effects of school composition by immigrant status, the immigrant dummy variable is group-mean centered.<sup>5</sup>

The first step for multi-level models is to examine the amount of variability in students' educational expectations that exist between schools, rather than within schools. I use both an interclass correlation coefficient (ICC) calculation and a "95% prediction interval" as suggested by Raudenbush & Bryk (2002, p. 297), to determine that multi-level analysis is both appropriate and worthwhile for this study.<sup>6</sup>

Because some variables in my models are known to be correlated with one another, I examine collinearity diagnostics to get a more precise understanding of where problems may lie. The only diagnostic values that are above Allison's (1999) cautionary point of 2.5 are the level-2 variables for proportion Latino and proportion immigrant. However, others are less conservative

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<sup>5</sup> Robust standard errors are used, and population-average models are reported, as suggested in the literature (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004).

<sup>6</sup> The ICC was  $0.07 (.26 / (.26 + 3.29)) = .07$  (based on Snijders & Bosker (1999)) implying that roughly 7% of the variance in students' graduate school expectations is explained at the school-level. I first created a 95% interval of log-odds from the null model using the expectation of a graduate as the dependent variable:  $-0.57 \pm 1.96 * \sqrt{0.26} = (-1.57, 0.43)$ . When this was converted into probabilities rather than log-odds, the interval was (0.17, 0.39). In other words, it appears that within the 95% range, there were some schools where only 17% of the students, on average, expected to attain a graduate/professional degree, and other schools where 39% of the students expected to attain that level.

than Allison in their estimations of troublesome tolerance levels,<sup>7</sup> and therefore, I present three different versions of the results for each regression model. I report findings for each model with race composition variables in the model but without the immigrant composition variables, then I present a model without race composition variables but including the immigrant composition variables, and then I present a complete model with both racial and immigrant composition variables simultaneously. Though this complicates the presentation and interpretation of results, it should give the most complete picture for effects of racial/ethnic and immigration composition on expectations.

First, I run a model including only variables at the student level. I then include only the level-2 variables of interest for school composition. These models show the effects of school composition without controlling for other school factors. In the next set of models I include all variables at both level-1 and level-2. This allows one to see the effects of the variables of interest while controlling for other salient school-level (and individual-level) factors. The final set of models includes all level-1 and level-2 variables, and also includes interaction variables for immigrant status. I interact the immigrant dummy variable with each of the school-composition variables of interest. This shows how school composition factors affect expectations for children of immigrants more or less than they affect nonimmigrants' expectations. In all tables I report changes in overall predicted probabilities for expectations, based on a one-unit change in any given independent variable, represented with delta-p values (Cabrera, 1994; Peterson, 1985).

## Results

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<sup>7</sup> Fox (1991) suggests that a VIF of 4 or greater indicates collinearity, while Myers (1990) and Stevens (2002) consider VIFs of 10 to be problematic.

Results concerning expectations for a graduate or professional degree are presented in Tables 1 & 2.<sup>8</sup> Table 1 shows how student-level factors are associated with expectations without taking school-level factors into account. As expected, immigrant status is significantly positive. The child of an immigrant is, on average, about 8% more likely to expect a graduate degree than a nonimmigrant. Other factors at the individual level also match past literature. Positive effects occur for females, racial minorities, students with high parental and peer expectations, and students with high SES and ability.

<insert Table 1 here>

When I add school level factors (Table 2) Asian and Latino students no longer have higher expectation than whites, but all other effects stay relatively stable. For example, children of immigrants still have higher average expectations than do nonimmigrant students. The significance and direction of the level-1 variables remains consistent in all models for the study, though they are not shown in Table 2.

Model 1 in Table 2 shows the effects of the compositional variables of interest without other level-2 control variables. This model supports the common finding that school-SES is positively related to a student's expectations, and that school-ability is negatively related (a.k.a., the "frog pond" effect). These results support the comparative and normative theories of expectations for all students. This model also shows marginally positive effects of the proportion of black students in a school on overall expectations.

<insert Table 2 here>

Models 2-4 in Table 2 test the effects of school-level variables on individual expectations (without interactions) but include all school-level control variables. When included, urban

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<sup>8</sup> More complete tables of raw log-odds values, with all variables included, are available upon request.

schools (compared to non-urban schools) are consistently associated with higher expectations, and schools in the South (compared to the Midwest) are strongly associated with higher expectations for graduate or professional degrees. The coefficients for school composition variables change slightly in the presence of these controls. A school's aggregate SES is only marginally statistically significant, and the effect of a school's aggregate ability is lessened, but statistically significant. Racial/ethnic composition effects disappear with the exception of the proportion of the school that is Asian, which has a slight positive association with expectations. The immigrant composition variable is also marginally positively significant. However, when included in the same model (model 4, Table 2), the immigrant composition and Asian composition variables dampen each other's associations, possibly implying that these represent similar underlying effects, perhaps because Asians are a significant portion of the immigrant population.

Models 5-7 in Table 2 show results related to my hypothesis concerning the differential impact of school composition on children of immigrants by including a series of cross-level interaction variables. The first notable conditional effect is that a school's SES consistently affects children of immigrants negatively relative to the effect for nonimmigrants. Since the "main" effect for aggregate SES is not statistically significantly different from zero, this means that a school's SES does not have an effect on nonimmigrants' expectations, but that for children of immigrants it has a relatively negative effect.<sup>9</sup>

A school's aggregate ability also has a statistically significant conditional effect for immigrant students. Since the "main" effect of school-level ability is negative, the positive

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<sup>9</sup> The "main" effects of school composition variables are actually the effect for nonimmigrants rather than true overall main effects, due to the inclusion of the interaction of these variables with the immigrant dummy variable (see Jaccard, 2001).

conditional effect implies that the “frog pond” effect, which is true for nonimmigrants, may not be true for children of immigrants. In other words, high-ability schools are not associated with lower expectations for children of immigrants to the extent that they are for nonimmigrants (and conversely, low-ability schools are not associated with higher expectations to the same extent). In models 5-7, no conditional effects exist for variables concerning race/ethnicity or immigrant composition. The exception is a marginally positive conditional effect for children of immigrants, compared to nonimmigrants, associated with the proportion of the school population that is Black.

To emphasize the differences between children of immigrants and nonimmigrants, I present Figures 1 & 2 representing predicted probabilities of expecting to complete a graduate or professional degree, by school-SES and school-ability.<sup>10</sup> I set all variables other than those of interest to their means. These simulations show clearly that although nonimmigrants may follow the commonly accepted comparative and normative school-effect associations for SES and ability, children of immigrants do not. This is a clear visual picture of a challenge to commonly accepted theories of school composition, which is discussed further in the next section.

<insert Figures 1 & 2 here>

### Discussion and Implications

Many of my results confirm prior research. Children of immigrants, on average, have higher expectations than nonimmigrants, as do females, black students, students with high parental expectations, students with peers that plan to go to college, high SES students, and high achieving students. At the school level, schools in the South and urban schools are associated

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<sup>10</sup> Probabilities were calculated from the logit coefficients in Model 9 of Table 2 (with all other values held at their means) using the following formula:  $\Pr(y=1|x) = \exp(x\beta)/(1+\exp(x\beta))$ .

with higher expectations. In terms of school composition, the classic “frog pond” theory is supported since there is a negative association between a school’s aggregate ability and an individual’s expectations overall. The commonly accepted normative theory is also supported since school-SES is related to higher student expectations overall, though the effect is small. Schools with higher proportions of Asians have marginally significantly positive effects on expectations as well.

The first hypothesis for this study - that students in schools with higher proportions of immigrants will have higher expectations - is only partially supported. In models that only contained variables about the immigrant composition of a school (without race/ethnicity) this hypothesis is marginally supported, but was especially true for the effect of immigrant composition on nonimmigrants’ expectations. In models that include race/ethnicity, immigrant composition is not significant overall, however. This may be due to the confounding effect of Asian immigrants, since those variables appear to diminish each other’s positive effects to some degree when considered simultaneously.

The second hypothesis for this study - that children of immigrants are differentially impacted by school composition compared to nonimmigrants, and in ways that may counter established theory – also has mixed results. In support of hypothesis 2a, the graduate school expectations of children of immigrants tend to be less positively affected by a school’s socioeconomic composition than are nonimmigrant students. In fact, immigrant status is actually associated with lower expectations in higher-SES schools, all else being equal. This could represent a sort of socioeconomic frog pond phenomenon, and deserves further examination. Conversely, children of immigrants have relatively higher expectations compared to nonimmigrants when in lower-SES schools, *ceteris paribus*. This could be a result of immigrant

optimism regardless of the socioeconomic environment, which nonimmigrants may not experience.

Also in support of hypothesis 2a, immigrant students are associated with a positive conditional effect based on a school's aggregate ability (models 5-7). The overall effect for aggregate ability is significantly negative, implying that children of immigrants do not have their expectations lowered to the same degree as nonimmigrants when in a higher-ability environment. In other words, children of immigrants have relatively higher expectations in that higher achieving, more competitive environment, all else being equal. Again, children of immigrants appear to be differentially impacted by school composition.

This study, therefore, shows that homogenous theoretical approaches to students' educational expectations may be misguided, and the same may be true of research, policy, or practice. Similar suggestions have been made in past studies of specific groups of students, but this result has not been previously demonstrated so broadly and explicitly. This is a reminder to researchers and practitioners alike that subgroups of students, in this case the children of immigrants, may not be affected by schools in similar ways.

I emphasize the "critical quantitative" dimension of educational research by demonstrating that two specific theories may be inaccurate for children of immigrants in today's schools. This should also serve as a reminder that the distinction "children of immigrants," though useful as a starting point to challenge established theories, is very broad. As Noguera (2004) states: "Be wary of claims that are based on static categories and broad generalizations." Further research should examine subgroups by immigrant generation, country of origin, English language ability, and many other potentially salient factors. In addition, further school-level

variables, such as school quality, should also be examined to determine if other past results have masked unique processes for children of immigrants.

More formally, this analysis, emphasized by Figures 1 and 2, demonstrates that comparative and normative theories of school effects are not accurate for children of immigrants, at least not to the same degree as they are for nonimmigrants. The comparative and normative theories of school composition need to be reexamined based on various subpopulations, and specifically for their effects on children of immigrants. One possible explanation is that other children of immigrants may serve as a frame of reference for expectation-formation among children of immigrants to a greater extent than the larger school and/or community populations.

The conditional effects of racial composition and immigrant composition are nonexistent for the most part, with the exception of a marginally positive effect based on the proportion of Black students in the school. This result contradicts hypothesis 2b. However, this one marginally significant finding may provide a small level of support for segmented assimilation theory since although the proportion of black students has no effect for students overall, children of immigrants may have a connection to the higher expectations of black students in a school population in a way that nonimmigrant students do not. Whether such a compositional racial effect is really supported, and whether or not this is really evidence of segmented assimilation, will require further research with that specific focus.

This study relies exclusively on school-level composition variables. However, it is also true that normative socialization processes and/or competitive environments for comparative processes are likely to vary within schools as well. This may be due to peer groups, cliques, academic tracks, grade-levels, or other within-school group factors. For ELL immigrant youth, this may be related to the “ESL track” that can limit opportunities and access to mainstream

curriculum (Arias, Faltis, & Cohen, 2007; Palmer, 2006). This study does not account for such variation within schools, but it would be a valuable area for further research.

These results have their primary implication at the theoretical level, in challenging established theories and leading to new areas of future research. However, with extended research building from these findings, there may also be future implications and applications for a variety of audiences. Policymakers at all levels may be able to modify policies based on how school composition affects college expectations, and how they affect children of immigrants differently. For example, pre-college programs (such as the national GEAR UP program and many types of university bridging programs) could target the types of schools that are associated with low-expectations, and could tailor these programs to work with children of immigrants specifically in schools with traits that are shown to differentially impact these students.

The most strongly significant conditional effects – that children of immigrants are differentially negatively impacted by higher socioeconomic schools, and differentially positively impacted by higher ability schools - may mean that special college counseling could be targeted at children of immigrants in these types of schools. Although these school characteristics are inversely related, schools that are disproportionately high-SES and low-ability may be especially detrimental to expectations for children of immigrants.

The conditional effects show that children of immigrants' expectations are in some ways less volatile in response to school composition than are nonimmigrants. This is positive in the sense that immigrant students' higher average expectations are less affected by the school. However, since children of immigrants still enroll in college in lower-than-expected proportions, one can not assume that this "positive" effect on expectations will be sufficient for actual social mobility. In fact, the gap between expectations and matriculation in higher education - the

“misaligned ambitions” (Schneider & Stevenson, 1999) if you will - and what affects this gap for children of immigrants compared to nonimmigrants, may be one of the most important areas worthy of extended study that will grow out of this research.

Future studies examining the misalignment of expectations and enrollment and/or attainment for children of immigrants should explore concrete behaviors rather than simply students’ self-reported expectations. For example, researchers could explore the relationship between misalignment and applications submitted, meetings with counselors, applications for aid, major choice, classes taken, etc. There may be creative ways to operationalize these and other factors in future research with other data. Qualitative research should explore this topic since it has distinct advantages over quantitative approaches in several ways.

For practice more broadly then, programs such as those discussed above may need to reconsider what is really needed for various types of students. Although high expectations are a necessary first step on the path to college and eventual status mobility, children of immigrants that already have high expectations on average, and who do not have those expectations affected in the same way that nonimmigrant students do, may be better served by programs that focus on how to *realize* these expectations, rather than raise them. Programs aimed at children of immigrants may be better served by activities that provide concrete, practical information concerning college admissions, financial aid, and other factors affecting enrollment than by focusing on the formation of high expectations. Combining this with additional differentiation based on school composition would be interesting and worthwhile. Therefore, as a challenge to commonly accepted theory and as a foundation from which to extend this line of research and its policy implications, this study is a critical first step on the path toward understanding the

educational processes of an important and growing group of students, and toward eventual higher educational attainment and social mobility for children of immigrants.

Table 1. Student-Level Logistic Regression for Expecting a Graduate/Professional Degree (Delta-p statistics reported)

	Individual factors
Immigrant	0.08***
Female	0.14***
Asian	0.08*
Latino	0.07**
Black	0.21***
Parental Expectations	0.23***
Parental Involvement	0.02
Peers' plans	0.16***
Single parent household	0.01
SES (std)	0.07***
Test Score (std)	0.15***

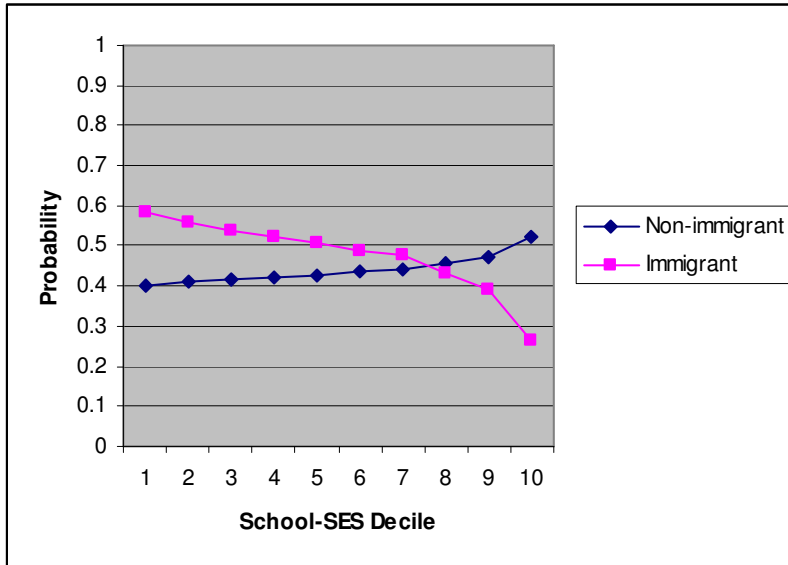
Note: \*\*\*p<.001; \*\*p<.01; \*p<.05; †p<.10; Complete details (including raw logit coefficients and standard errors) are available upon request.

Table 2. Logistic Regression for Expecting to Complete a Graduate or Professional Degree (Delta-p statistics reported)

	School comp. only (1)	All school-level (race) (2)	All school-level (immig.) (3)	All school-level (4)	Plus cond. effects (race) (5)	Plus cond. effects (immig.) (6)	Plus cond. effects (7)
<b>LEVEL 1 (N=10, 851)</b>							
Immigrant	0.07*	0.07**	0.06*	0.07*	0.06*	0.05 <sup>+</sup>	0.06*
<b>LEVEL 2 (N=747)</b>							
Agg. SES (std)	0.05***	0.03 <sup>+</sup>	0.03 <sup>+</sup>	0.03 <sup>+</sup>	0.03 <sup>+</sup>	0.03	0.03
Agg. Ability (std)	-0.04**	-0.04*	-0.04*	-0.04*	-0.04*	-0.04*	-0.04*
Asian Comp.	0.21	0.27*	--	0.26 <sup>+</sup>	0.33**	--	0.24 <sup>+</sup>
Black Comp.	0.10 <sup>+</sup>	0.01	--	0.01	0.01	--	0.00
Latino Comp.	0.09	0.09	--	0.08	0.13 <sup>+</sup>	--	0.08
Immigrant Comp.	0.01	--	0.10 <sup>+</sup>	0.02	--	0.16***	0.09
Catholic	--	0.04	0.04	0.04	0.04	0.04	0.04
Private (non-Cath)	--	0.03	0.03	0.03	0.04	0.03	0.03
Urban	--	0.06*	0.06**	0.05*	0.06*	0.06**	0.06*
Northeast	--	0.02	0.01	0.01	0.02	0.01	0.02
South	--	0.08**	0.08***	0.08**	0.08**	0.08***	0.08***
West	--	-0.02	-0.01	-0.02	-0.02	-0.01	-0.02
<b>Interactions (Immigrant*_____)</b>							
Agg. SES (std)	--	--	--	--	-0.09***	-0.08**	-0.09***
Agg. Ability (std)	--	--	--	--	0.10**	0.08*	0.10**
Asian Comp.	--	--	--	--	-0.10	--	-0.15
Black Comp.	--	--	--	--	0.20 <sup>+</sup>	--	0.19
Latino Comp.	--	--	--	--	-0.02	--	-0.06
Immigrant Comp.	--	--	--	--	--	-0.02	0.07
Variance between institutions ( $\tau$ )	0.06***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***
Between-institution variance explained	76.9%	88.5%	88.5%	88.5%	88.5%	88.5%	88.5%

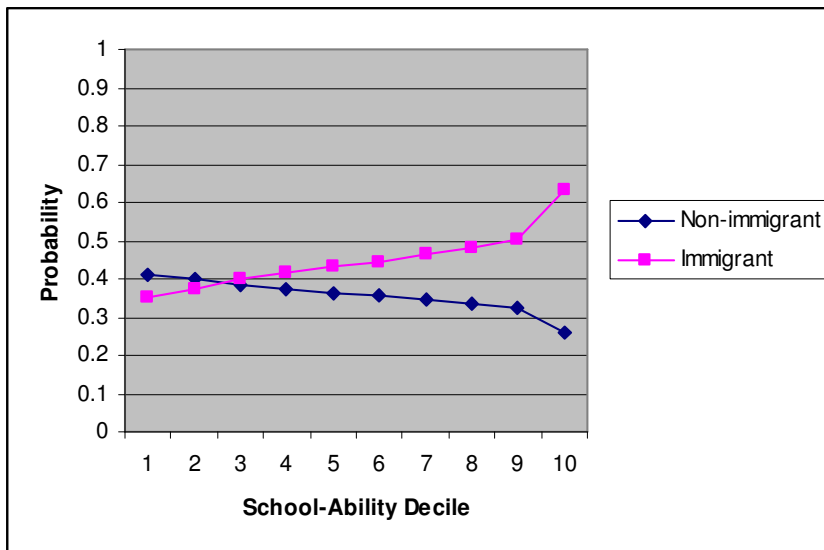
Note: \*\*\*p<.001; \*\*p<.01; \*p<.05; <sup>+</sup>p<.10; Complete details for these models (including all level-1 variables) are available upon request. All level-1 variables in Table 1 were included in these models, though not shown.

Figure 1. Probability of Expecting a Graduate or Professional Degree, by School-SES and Immigrant Status



Note: Probabilities calculated from logit coefficients from Model 7 with other values set to zero.

Figure 2. Probability of Expecting a Graduate or Professional Degree, by School-SES and Immigrant Status



Note: Probabilities calculated from logit coefficients from Model 7 with other values set to zero.

Appendix

Table A. Descriptive Statistics for Variables

Variable	Variable Description	Mean	Std Dev	Range Low, High
<b>LEVEL 1 (N=10,851)</b>				
Expect Graduate or Professional Degree	Binary dependent variable (1= expect to complete a Master's, professional degree, or PhD; 0 = expect less than completion of a Master's degree)	0.36	0.48	0,1
Immigrant	Dummy variable (1= child of at least one immigrant parent; 0= nonimmigrant)	0.18	0.39	0,1
Female	Dummy variable (1=female; 0= male)	0.51	.50	0,1
Asian	Dummy variable (1=Asian; 0= non-Asian) (reference category = white)	0.04	0.19	0,1
Latino	Dummy variable (1= Latino; 0= non-Latino) (reference category = white)	0.13	0.33	0,1
Black	Dummy variable (1=Black; 0= non-Black) (reference category = white)	0.12	0.33	0,1
Parental Expectations	Dummy variable (1=at least one parent expects the student to attain a bachelor's degree or higher; 0=no parent expects a bachelor's degree or higher)	0.77	0.42	0,1
Parental Involvement	Factor score representing the involvement that a parent had in the student's high schools life	0.33	0.58	-2.933, 0.689
Peers' plans	Dummy variable (1= most or all of the student's friends plans to attend a four-year college or university; 0= none, few, or some of the student's friends plan to attend a four-year college)	0.54	0.50	0,1
Single parent household	Dummy variable (1= student lives in a household with 2 parents/guardians; 0= student lives in a different family arrangement)	0.22	0.41	0,1
SES (std)	Socioeconomic status of the student's family. (standardized)	0.13	0.98	-2.94, 2.52
Test Score (std)	Composite score of standardized reading and math scores (standardized)	0.17	0.98	-2.99, 3.13

Table A continued

<b>LEVEL 2 (N=747)</b>				
Aggregate SES (std)	An aggregate measure of the socioeconomic status of the student body. (standardized)	0.00	1.00	-2.40, 3.36
Aggregate Ability (std)	An aggregate measure of the test scores of the student body. (standardized)	0.00	1.00	-2.64, 3.11
Asian Composition	An aggregate measure from student-level race variables representing the proportion of Asians in the student body.	0.03	0.09	0, 0.84
Black Composition	An aggregate measure from student-level race variables representing the proportion of Blacks in the student body.	0.11	0.22	0, 1.00
Latino Composition	An aggregate measure from student-level race variables representing the proportion of Latinos in the student body.	0.10	0.19	0, 1.00
Immigrant Composition	An aggregate measure from student-level immigrant variables representing the proportion of immigrants in the student body.	0.13	0.19	0, 1.00
Catholic	Dummy variable (1= catholic control; 0= public or non-Catholic private control) (comparison group = public)	0.05	0.22	0,1
Private (non-Catholic)	Dummy variable (1= non-catholic private control; 0= public or Catholic control) (comparison group = public)	0.20	0.40	0,1
Urban	Dummy variable (1= urban school; 0= non-urban)	0.21	0.41	0,1
Northeast	Dummy variable (1= school is in the Northeast; 0= school is not in the Northeast) (comparison group = Midwest)	0.17	0.37	0,1
South	Dummy variable (1= school is in the South; 0= school is not in the South) (comparison group = Midwest)	0.37	0.48	0,1
West	Dummy variable (1= school is in the West; 0= school is not in the West) (comparison group = Midwest)	0.20	0.40	0,1

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