

# English Language Learners' Access to and Attainment in Postsecondary Education

(RG 09-141)

July 2010

**Yasuko Kanno**

Associate Professor, Temple University  
CITE Department, College of Education  
Ritter Hall 462  
1301 Cecil B. Moore Ave.  
Philadelphia, PA 19122  
(215) 204-7729  
ykanno@temple.edu

**Jennifer G. Cromley**

Assistant Professor, Temple University  
Psychological Studies in Education, College of Education  
Ritter Annex 201  
1301 Cecil B. Moore Ave.  
Philadelphia, PA 19122  
(215) 204-8094  
jcromley@temple.edu

## English Language Learners' Access to and Attainment in Postsecondary Education

### **Abstract**

Although English language learners (ELLs) are currently the fastest growing group of the school age population in the United States, there is surprisingly little information on their participation in postsecondary education. Using the National Education Longitudinal Study of 1988 (NELS:88), a nationally representative sample of 8th graders who were followed for 12 years, we present one of the first national-level examinations of ELLs' access to and degree attainment in postsecondary education. Our analyses show that ELLs lag far behind both English-proficient linguistic minority students and monolingual English-speaking students in college access and attainment. Only 1 in 8 ELLs in the NELS data earned a bachelor's degree while 1 in 4 English-proficient linguistic minority students and 1 in 3 English monolingual speakers did; one in 5 ELLs was a high school dropout. Our probit regressions identified a host of factors—students' economic capital, social and cultural capital coming from parents, academic capital they can accrue in high school, and college attendance patterns—that are likely to differentiate ELL's access and attainment levels from those of the other two groups.

## English Language Learners' Access to and Attainment in Postsecondary Education

Yasuko Kanno & Jennifer G. Cromley, Temple University

English language learners (ELLs), students with limited English proficiency, are currently the fastest growing group of the school age population in the United States (Wolf, Herman, Bachman, Bailey, & Griffin, 2008). There are now roughly 5 million ELLs in Pre-K-12 public schools, representing approximately 10.3 percent of all students (National Clearinghouse for English Language Acquisition, n.d.). The U.S. Department of Education estimates that this figure will increase to 25 percent of students by 2025 (Spellings, 2005). If ELLs are rapidly increasing in number in K-12 schools, we can expect them to be a growing presence in postsecondary education (PSE) as well. Yet, we currently know very little about ELLs' college-going patterns.

There is a large body of research on traditionally underrepresented students' access to and attainment in college. However, in this set of literature, sociologists tend to focus on variables such as race/ethnicity (Deil-Amen & Turley, 2007; Kao & Thompson, 2003), Latinos (Arbona & Nora, 2007; Auerbach, 2004; Callahan, 2008; Nuñez, 2009; Percy Calaff, 2008; Swail, Cabrera, Lee, & Williams, 2005), socioeconomic status (Bowen, Kurzwell, & Tobin, 2005; McDonough, 1997; Walpole, 2007), first-generation college students (Nuñez & Cuccaro-Alamin, 1998; Pascarella, Pierson, Wolniak, & Terenzini, 2004) and undocumented immigrants (Morales, Herrera, & Murry, 2009). ELLs may be subsumed under one or more of these categories, but they are rarely studied in their own right. On the other hand, applied linguists and composition scholars have been studying college-level ELLs' academic literacy and their experiences in ESL and composition classes (e.g., Harklau, Losey, & Siegal, 1999; Leki, 2007;

Matsuda, 1999; Matsuda, Ortmeier-Hooper, & You, 2006; Roberge, Siegal, & Harklau, 2009; Shapiro, 2009; Spack, 1997; Zamel, 1995). But they tend to focus mainly on their linguistic challenges, leaving unexplored the broader issues of ELLs' college access and success.

Traditionally, high school graduation, rather than PSE participation, has been the focus of the researchers and educators who are interested in ELLs' educational achievement (Callahan & Gándara, 2004; Harklau, 1999). However, in today's knowledge economy, a high school diploma no longer guarantees job security and economic stability in one's life. Nearly two thirds of the 18.9 million new jobs created between 2004 and 2014 are projected to be filled by PSE-educated workers, while almost 90 percent of the particularly high-growth, high-paying jobs will require a bachelor's degree or higher (U.S. Department of Labor, 2006). Thus, if ELLs lag behind more English-proficient students in their PSE credentials, there will be severe and lasting repercussions for their future economic and occupational prospects.

A small but growing body of studies that focuses specifically on ELLs' access to and attainment in college suggests the immense challenges that ELLs will encounter if they want to advance to PSE. Using the Current Population Survey, Klein, Bugarin, Beltranena, and McArthur (2004) have found that only 13.5 percent of the 18- to 24-year-old adults with limited English proficiency were enrolled in PSE institutions in 1999 compared with 37.2 percent of those who spoke only English at home (p. 25, Table 12). Other studies have begun to reveal that what inhibits ELLs' college access is not simply their limited English proficiency but also institutional, economic, and identity factors associated with ELLs (Callahan, 2005; Callahan, Wilkinson, & Muller, 2010; Callahan, Wilkinson, Muller, & Frisco, 2009; Harklau, 2000; Mosqueda, 2007). ELLs' placement in English as a second language (ESL) classes in high school steers them away from college preparatory courses, making them less eligible to four-year

institutions (Callahan, 2005; Callahan, Muller, & Wilkinson, 2009). Even ELLs who are more academically engaged and have higher GPAs than their more English-proficient peers nonetheless have lower retention rates in community colleges because of financial struggles and family obligations (Almon, 2010). Further, institutional labeling of ELLs tends to frame them in deficit terms, which leads to lower teacher expectations and academic marginalization (Harklau, 2000; Louie, 2005).

Thus, although a few scholars are starting to explore ELLs' PSE access and persistence, overall there is still very little research available on ELLs' college-going patterns. In particular, apart from Klein et al.'s (2004) research, there are no national-level statistics on ELLs' college access and attainment. Klein et al.'s study, moreover, only taps into the traditionally college-aged youth's participation in PSE and does not investigate the factors that contribute to the differential PSE participation for ELLs and non-ELLs.

In this study, then, using the National Education Longitudinal Study of 1988 (NELS:88), we examine ELLs' PSE access and degree attainment at the national level and the factors that contribute to differential access and attainment levels for ELLs and non-ELLs. More specifically, this study asks the following research questions:

1. Are ELLs' patterns of access to and attainment in college different from those of monolingual English-speaking students and those of English-proficient linguistic minority students?
2. If there are differences among these three groups, which variables predict level of access and level of attainment?

### **Theoretical Assumptions**

Three theoretical assumptions underlie our inquiry. Our first assumption is that ELLs' educational experiences are different from those of linguistic minority students who are English proficient; therefore these two groups need to be separated in analysis. Rumbaut's (1995) analyses of large-scale data from the San Diego School District show that ELLs had a lower GPA than their monolingual-English-speaking peers, while English-proficient linguistic minority students outperformed monolingual English speakers by a small margin. Similarly, Kao and Tienda (1995) conclude, on the basis of their NELS:88 analysis, that first-generation immigrant students are at a slight academic disadvantage because of their limited English proficiency while second-generation youth are in the best position to achieve scholastically because they are proficient in English and they still have the "immigrant optimism" inherited from their first-generation parents. These studies suggest that limited-English-proficient and fluent-English-proficient linguistic minority students constitute two different populations with regard to academic achievement and need be separated as two distinct groups in our analyses of college access and attainment.

Second, we assume that *ELL* is an aggregate of multiple attributes, not just a student with limited English proficiency. Limited English proficiency is a known cause of academic underachievement, which in turn limits one's access to higher education (Solórzano, 2008; Suárez-Orozco, Suárez-Orozco, & Todorova, 2008; Thomas & Collier, 1997, 2002). However, ELLs also have other attributes that may inhibit their participation in higher education. The majority of ELLs today are racial/ethnic minorities; they also tend to be poorer and have less educated parents than native-English-speaking students (Bennici & Strang, 1995; Zehr, 2009). As race/ethnicity, socioeconomic status, and parental education are three of the most widely recognized college-access predictors (Bowen et al., 2005; Deil-Amen & Turley, 2007; Pascarella

et al., 2004), we assume that these aspects of ELLs' profiles, not just their limited English proficiency, influence their access to and attainment in PSE.

Our third assumption—closely related to the second—is that various forms of *capital* that students possess, or lack, shape their PSE access and attainment, rather than any one single resource or characteristic. Bourdieu (1977, 1986; 1990), to whom the concept of capital is most often attributed, defines the term as resources that are “capable of conferring strength, power and consequently profit on their holder” (1987, p. 3). Scholars have investigated the relevance of various forms of capital in college access and attainment; among them, we focus on four kinds of capital in this study: *economic*, *cultural*, *social* and *academic* capital. Regarding economic capital, it is by now widely acknowledged that students who come from higher-income families have easier access to college than those who come from lower-income families (Bowen et al., 2005; McDonough, 1997; Walpole, 2007). Cultural capital relevant to college-going includes the knowledge of how to navigate the educational system, the attitudes and behaviors that are valued in school, and the sense of entitlement with which to demand accommodations (Bourdieu, 1986; Bourdieu & Passeron, 1990; Horvat, 2000; Lamont & Lareau, 1988; Lareau, 2003). Linguistic capital, proficiency in a socially privileged language—in this case, English—is also an important form of cultural capital.

Social capital, social connections and networks that can yield valuable resources, support, and information for a particular purpose (Bourdieu, 1986; Portes, 1998; Stanton-Salazar, 2004, p. 18) can be split into (1) family (including extended-family) support, and (2) non-family, especially institutional, networks (Portes, 1998). Parents who frequently engage in conversation with their child and who are actively involved in the child's schooling act as a better source of social capital for the child's academic achievement than those who do not (Hao & Bonstead-

Bruns, 1998; Plank & Jordan, 2001). Also, a child who comes from a two-parent (or two-guardian) family is likely to have more family support than a child who comes from a single-parent (or single-guardian) family (Hirschman & Lee, 2005). Non-familial social capital, on the other hand, especially in the form of an on-going, trusting relationship with an institutional agent (a teacher, a counselor), is also known to have a major impact on students' academic achievement and access to college; it is this relationship that immigrant, racial minority, and low-income students often lack (Holt, Brenna, & Johnson, 2008; Stanton-Salazar, 2004)

Finally, academic capital includes academic abilities, subject matter knowledge, GPA, and access to college preparatory courses. Academic capital, as far as college-going is concerned, is as much a function of one's scholastic aptitude as the availability of rigorous academic preparation in one's school environment. Academic preparation in high school, in particular, has long been identified as a strong predictor of a student's degree attainment (Adelman, 1999, 2006; Perna & Titus, 2005). But as we mentioned above, ELLs are often prevented from taking college-preparatory courses (Callahan, 2005; Callahan et al., 2010). Minority students in general also tend to be concentrated in schools that are poorly staffed and resourced (Darling-Hammond, 2007), which affects the quality of education they can receive.

## **Methods**

### **Data**

NELS:88, sponsored by the National Center for Education Statistics, started in 1988 with a nationally representative stratified random sample of 24,600 eighth graders from 1,052 randomly selected schools, and followed them for the next 12 years. After the base-year NELS survey in 1988, students were resurveyed at two-year intervals until 1994 and then one final time in 2000 (i.e., four follow-ups: 1990, 1992, 1994, and 2000). Students were followed up, to the

extent possible, regardless of whether they were still enrolled in formal schooling. Information was also collected from parents, teachers, and school administrators to supplement the student surveys. Students' achievement tests and high school and PSE transcripts are also available for analysis. Asian and Hispanic students were intentionally oversampled in order to include sufficient numbers of these students in the sample for statistical analysis. This is a particularly important feature of NELS for the purpose of our study because many Asian and Hispanic students are linguistic minority students. (For more information on NELS:88, see, <http://nces.ed.gov/surveys/NELS88/>)

It is important to note that students with severely limited English proficiency who were not able to read the surveys in English were excluded from the NELS original sample. Therefore, it is important to bear in mind that the results we report in this study are likely to be somewhat optimistic. Also, as with any large-scale longitudinal study, a substantial portion of original participants in NELS dropped out of the study over time. Of the 24,600 students in the initial sample, our sample consists of those students who participated in all five waves of data collection, resulting in an analytic sample of 12,140 students. Participant attrition is accounted for in our analyses by two methods: the NELS-calculated weights which adjust for dropout and our use of Full Information Maximum Likelihood estimation in our analyses. Also, although the NELS data are somewhat dated by now, they nonetheless constitute the newest dataset available that allows us to track students' educational trajectories from the beginning of high school to the end of college.<sup>1</sup>

---

<sup>1</sup> There is also a more recent dataset, called the Education Longitudinal Study of 2002 (ELS:2002), which tracks a national sample of 10th graders through high school graduation and PSE participation (see <http://nces.ed.gov/surveys/els2002/>). Although the newness of ELS:2002 certainly offers an advantage over NELS:88, we decided to analyze NELS for the following reasons. ELS is still collecting data, and currently the most

## Language Status

We divided students into three categories according to their language status: *English monolingual students* (EMs), *English proficient linguistic minority students* (EPs), and *English language learners* (ELLs).<sup>2</sup> We used a variation of Strang, Winglee, and Stunkard's (1993) method of identifying different language status groups.

***English monolingual students (EMs)***. EMs are students who came from monolingual-English-speaking homes and whose first language (L1) was English. EMs were identified on the basis of their responses to the base-year (BY) survey. If students answered that the first language they learned to speak was English and that no language other than English was spoken in their home, they were identified as EMs. We identified 8,520 EMs in the sample.

***English proficient linguistic minority students (EPs)***. EPs are those students whose L1 was not English *or* who spoke a language other than English at home, but who exhibited no sign of limited English proficiency at the time of the BY survey. We identified EPs in two stages. First, if students answered in the BY survey that their L1 was not English or that a language other than English was spoken in the home, then we categorized them as linguistic minority

---

recent follow-up data available are from 2006, which is 2 years after participants' scheduled high school graduation. In other words, ELS does not yet offer information on participants' PSE attainment. Since we wanted to examine not only ELLs' PSE access but also attainment, it was crucial that we use a dataset that contains both students' PSE access *and* their attainment. Once ELS's 2010 and 2012 follow-up data are made available, we will be able to conduct similar analyses to compare our NELS results to the more recent population.

<sup>2</sup> NELS:88 includes a composite variable, *BYLEP*, for students whom we call ELLs here. However, researchers in the past have expressed dissatisfaction with this variable, arguing that the use of this variable results in false positive identification of ELLs (Guglielmi, 2008; Strang, Winglee, & Stunkard, 1993). Since the accurate identification of ELLs in NELS was of central importance to our analysis, we decided to identify ELLs ourselves using a variety of variables in the data rather than relying on a preexisting composite variable.

students (LMs). We then looked at LMs' self-rating in the four skills in English in the BY survey, and if they rated *all* four skills in the top two categories of the four-point scale, we categorized them as EPs. This resulted in 1,400 EPs.

***English language learners (ELLs).*** Finally, ELLs are those students whose L1 was not English or who spoke a language other than English at home, *and* additionally, who exhibited signs of limited English proficiency. We used multiple sources of data to identify ELLs. First, of the LMs, if they rated at least one of the four skills in English in the bottom two categories of the four-point scale in the BY survey, we categorized them as ELLs. Students who answered that they were currently receiving ESL instruction or bilingual education were also categorized as ELLs. Also, NELS surveyed two teachers for each student in the BY survey. If at least one of the teachers identified a student as an ELL, the student was identified as an ELL.

One problem with ELL identification by the student BY survey is that many students with limited English proficiency skipped answering key language background questions on the survey. Relying solely on survey responses, even with the addition of teacher survey responses, would have resulted in a considerable underrepresentation of ELLs. Therefore, following Callahan, Wilkinson, and Muller (2010), we also analyzed students' high school transcripts in order to identify ELLs by the courses they took. Any students who took at least one ESL, bilingual education, or sheltered English content classes during high school were identified as ELLs.<sup>3</sup> These multiple methods of identifying ELLs yielded 520 ELLs in our sample.

---

<sup>3</sup> On the NELS high school transcripts, some ESL-related courses can be identified by using the Classification System for Secondary Courses (CSSC) codes that are attached to individual courses. However, as Callahan et al. (2010) note, although CSSC codes identify subject matter and level, they do not always indicate whether a course is an ESL course or has linguistic support. In order to identify all ESL-related courses, it is necessary to search the transcripts by keywords. Following Callahan et al.'s lead, we used keywords such as English

In summary, we identified 8,520 EMs (82%), 1,400 EPs (13%), and 520 ELLs (5%) for a total of 10,440 students out of our analytic sample of 12,140 students (see Table 1).

[Insert Table 1 about here]

### **Access and Attainment**

Our dependent variables are *access to PSE* and *attainment in PSE*. Access to PSE refers to the student's first PSE institution, as reported in the NELS 1994 data collection and has four categories: (1) bachelor's institution or above, (2) community college, (3) vocational or certification program, and (4) no PSE. Attainment in PSE refers to the student's highest degree earned by 2000 and is divided into 6 categories: (1) bachelor's degree or higher, (2) associate's degree, (3) certificate, (4) some PSE, (5) high school diploma, and (6) high school dropout.

### **Data Analysis**

The data analysis was conducted in two stages. First, we examined the distribution of EMs, EPs, and ELLs across different levels of access and attainment, and used chi square to determine statistical significance. Once we had determined that the three language groups were unevenly distributed across different levels of access and attainment, we then conducted probit regressions using MPlus software (Muthén & Muthén, 1998-2007) to analyze the effects of various predictors to explain the different access and attainment rates across language proficiency groups.

In the type of linear regression familiar to many readers, we analyze an outcome such as a test score. This dependent variable shows a large range of scores and the score has a mean and

---

as a second language (ESL, ESOL, SOL, second language, SEC, SECOND, language development, LANGDEV, English development, ENG DEV, ELD, LEP, and LMTD), sheltered instruction (SHL, SHEL), and bilingual education (BIL, BI).

a standard deviation. The results of such a linear regression show us how large the contribution of each predictor is to the outcome, and the numbers expressing these contributions are called coefficients. Results also show how well we explained the outcome (called  $R^2$ ). Access and attainment, by contrast, are categories, not scores. Nonetheless, we can rank levels of access and attainment: e.g., an associate's degree can be ranked higher than a high school diploma but lower than a bachelor's degree. We therefore analyzed our data using a type of statistical analysis called probit regression, which is suitable for these kinds of data and that gives us similar coefficients and a pseudo  $R^2$ . For all predictors, we report the unstandardized coefficients ( $b$ , indicating the effect of a one *point* increase in the predictor on level of access or attainment) and standardized coefficients ( $\beta$ , indicating the effect of a one *standard deviation* increase in the predictor on level of access or attainment). Standardized coefficients allow for direct comparison of the relative magnitudes of the impact of independent variables.

Since certain subgroups are over-sampled in large-scale surveys such as NELS, and also because dropout from the study causes the proportions of various groups to shift over time, we used a weighting variable called F4PNLWT that accompanies the NELS:88 data set. In order to account for missing data, we used Full Information Maximum Likelihood (FIML) analyses in MPlus together with a robust estimator (MLR) which is a more conservative approach when there are missing data.<sup>4</sup> All analyses were evaluated at an alpha level of  $p < .05$ . Exact  $p$  values are reported in the text, except that very small obtained  $p$  values are reported as  $p < .001$ .

## **Independent Variables**

---

<sup>4</sup> Briefly, this approach uses correlations among variables for all available data to calculate coefficients but uses standard errors (for statistical tests) that are derived only for participants providing full data on all variables.

Given our theoretical assumption that various forms of capital contribute to a student's chances for higher education, it was important that we considered different facets of students' lives that could affect their access to and attainment to PSE in our regression analyses. For the college access regression analyses, we used three different categories of predictors: (1) demographic/individual characteristics, (2) family capital, and (3) high school factors. For the attainment analyses, we added another layer of school factors: (4) PSE factors. For all analyses, we entered variables in blocks in the following order: 1) language status, 2) all other demographic variables, 3) family capital, 4) high school factors, and for attainment only we entered 5) PSE factors. In the present manuscript, we report only the results of the final model, which for both access and attainment fit significantly better than all previous models.

**Demographic characteristics.** We entered four variables in the group of demographic/individual characteristics: language status, gender, race/ethnicity, and family income. Language status is represented by the three groups, EM, EP, and ELL, as discussed above. Gender is a dichotomous variable with male as the reference group. Four categories of race/ethnicity are included in the analysis: Asian, Hispanic, Black, and White (reference group). Family income is a 15-level categorical variable indicating the family's total gross annual income, ranging from no income (1) to \$200,000 or more (15). (See Appendix A for a more detailed description of how we derived variables.)

**Family capital.** Family capital, cultural and social capital available from the family, is measured by four variables: *parental education*, *family composition*, *educational expectations of parents*, and *parental discussion with child about PSE*. Parental education refers to the highest level of education achieved by either parent, ranging from no high school diploma (1) to a doctorate (6). In this study, following Nuñez and Kim (2009) and Walpole (2007), we separated

parental education from family income, using parental education as a measure of cultural capital available from the parents while using family income as a measure of the student's economic capital. *Parents' educational expectations* indicates how far the parent expects the child to advance in his or her education, ranging from less than high school diploma (1) to a Ph.D. or professional degree (12). *Family composition* is a dichotomous variable indicating whether the student came from a two-parent (or two guardian) home or a single-parent (or single-guardian) home. Parental involvement is measured by *discussion with child about PSE*. This is a factor score ( $M = 0$ ,  $SD = 1$ ) derived from parent answers to three questions regarding the degree to which parents talked to the child about plans to take the ACT or SAT, applying to college after high school, and the child's grades.<sup>5</sup>

**High school factors.** High school factors, consisting of three variables, taps into the forms of academic capital that students can accrue in high school: *highest level of high school math completed*, *high school GPA*, and *school climate*. *Highest level of high school math completed* is used as a proxy for a student's academic preparation in high school, a critical form of academic capital for college-going (Adelman, 1999, 2006; Perna & Titus, 2005). Math courses, because their hierarchical order is more uniformly instituted across the U.S. than other subject matter courses, can serve as good indicators of the intensity of a student's academic preparation in high school. Taking math courses beyond algebra 2, in particular, is considered a key predictor of students' viability in college (Adelman, 2006; Callahan et al., 2010). Using Burkham and Lee's (2003) categories of math courses, we analyzed the NELS high school transcripts by CSSC codes and categorized students into four groups according to the highest

---

<sup>5</sup> We used principal axis factoring for the factor analysis and a regression-based approach to calculating factor scores. Cronbach's alpha for the three questions was .70.

math course they completed in high school: *nonacademic* (basic or general math), *low academic* (pre-algebra and algebra 1), *middle academic* (algebra 2 and geometry), and *advanced academic* (calculus, trigonometry, and statistics). *High school GPA* is a continuous measure of a student's cumulative high school grade point average. *School climate* is a factor score derived from school administrator answers to three questions regarding absenteeism, robbery/theft, and vandalism.<sup>6</sup> It indicates whether the school provides a safe environment where students can concentrate on academic work.

**PSE factors.** Finally, how students behave after they have been admitted to college and what experiences they encounter on campus have an important bearing on their college attainment. For our attainment analyses, then, we included four measures of PSE factors: *part-time status*, *delay in entering PSE*, *total academic credits earned in first year of PSE*, and *first-year undergraduate GPA*. These four variables were chosen because they were among the variables that were particularly strong predictors of bachelor's degree attainment in Adelman's (2006) well-known analysis of NELS:88. *Part-time status* refers to whether students had ever attended less than full-time at their principal PSE institution. *Delay in entering PSE* indicates the time between a student's high school graduation and his or her entry into the first PSE institution. *Total academic credits earned in first year of PSE*, together with the part-time status variable, is a measure of a student's academic progress and his or her general engagement in college. Part-time enrollment and earning only a few credits a year are signs of less than full engagement in college, and students who are not engaged are less likely to persist in college (e.g., Astin, 1985;

---

<sup>6</sup> We used principal axis factoring for the factor analysis and a regression-based approach to calculating factor scores. Cronbach's alpha for the three questions was .56

Tinto, 1987). Finally, *first-year undergraduate GPA* measures a student's GPA in his or her first year of PSE attendance.

## **Results**

### **Differential Levels of Access and Attainment by Language Status**

Our Research Question 1 was, “Are ELLs’ patterns of access to and attainment in college different from those of monolingual English-speaking students and those of English-proficient linguistic minority students?” Using chi square tests, we found significantly different patterns among the three language groups for both college access ( $\chi^2 [6, N_{\text{weighted}} = 2,424,980] = 19888.3, p < .001$ ) and attainment ( $\chi^2 [10, N_{\text{weighted}} = 2,652,048] = 33230.4, p < .001$ ). First, with regard to PSE access, the biggest contribution to chi square is EM’s overrepresentation in the four-year institutions, followed by EMs’ underrepresentation in the community colleges and EPs’ overrepresentation in the community colleges (see Table 2). On the other hand, ELLs are overrepresented in the No PSE category. In other words, we found that ELLs advance to PSE institutions at much lower rates than their more English fluent peers, especially EMs. Only 18.9% of ELLs attended four-year institutions while 43.9% of them did not advance to any PSE institutions at all immediately after high school. By contrast, 43.2% of EMs moved on to four-year institutions immediately after high school, while only 24.3% did not advance to any PSE institutions. Access patterns for EPs resembled those of EMs more than they resembled those of ELLs, although a somewhat smaller percentage of EPs than EMs went to four-year institutions (37.9% vs. 43.2%) and a somewhat larger percentage of EPs than EMs went to community colleges (37.3% vs. 30.8%).

[Insert Table 2 about here]

The attainment patterns are similar to the access patterns (see Table 3). The biggest contribution to chi square here is, again, EMs' overrepresentation in the bachelor's degree or higher category, followed by EMs' underrepresentation in some PSE, EPs' overrepresentation in some PSE, and EPs' underrepresentation in bachelor's degree or higher, and EMs' underrepresentation in high school dropout. Within 8 years after their scheduled high school graduation, 32.0% of EMs attained bachelor's degrees or higher while 29.0% stopped at the high school level (i.e., *HS Diploma No PSE* and *HS Dropout* combined). In contrast, only 12.7% of ELLs obtained a bachelor's degree or higher while 49.2% stopped at the high school level or lower. In other words, within 8 years after high school graduation, roughly 1 in 3 EMs and 1 in 4 EPs earned a bachelor's degree or higher whereas only 1 in 8 ELLs did. Conversely, approximately 1 in 2 ELLs did not go to college at all while this applies to fewer than 1 in 3 EMs. Approximately 1 in 5 ELLs was a high school dropout. Across language groups, but especially for EPs, there is a large portion of students who started college but did not finish (i.e., large percentages in the *Some PSE* category).

[Insert Table 3 about here]

### **Factors Contributing to Differential Access and Attainment**

Thus, our analyses associated with Research Question 1 clearly indicated that ELLs were at a major disadvantage in both reaching and finishing PSE compared with their more English proficient peers, especially monolingual English speakers. We thus went on to ask Research Question 2: If there are differences among these three groups, which variables predict level of access and level of attainment?

**Access.** The final model explained 36.7% of the variance in college access. ELL but not EP is a significant predictor of access to PSE (see Table 4). Controlling for other factors, being

an ELL has a negative impact on one's chances for gaining access to college, by almost one full level (e.g., the difference between four-year institution and two-year community college is one level,  $b = -.84$ ). In other words, an ELL who could reach a four-year institution if she were an EM instead is most likely to reach only a community college simply because she is an ELL. On the other hand, this result suggests that coming from a linguistic minority background itself is not a negative influence as long as the student is proficient in English (EPs).

Once family capital factors and high school factors were added to the regression, race was no longer a significant influence on level of access. This suggests that much of what we see as differential access to PSE for different racial groups of students is an effect of other forms of capital that are closely associated with race, such as family income, parental educational expectations for the student, and academic preparation in high school (Deil-Amen & Turley, 2007).

Family income is a significant predictor ( $\beta = .10$ ); however, parental education and parental expectations for children's PSE attainment have stronger effects on their children's college access ( $\beta = .12$  and  $.17$  respectively), indicating a critical role of the cultural capital coming from parents. Parental discussion with child about PSE also has a positive influence (because this is a composite score, a one standard deviation increase in Parental discussion associated with a  $.15$  increase in access) which is in between the impact of parental education and parents' educational expectations.

Academic capital that students accrue in high school by far has the most impact on students' access to PSE. Of the three high school factors that we added to the regression, the highest level of high school math courses ( $b = .85$ ) and high school GPA ( $b = .89$ ) were significant, while school climate was not a significant predictor. High school GPA has the largest

effect size of all the significant predictors ( $\beta = .26$ ) followed closely by the highest level of math courses ( $\beta = .24$ ). For instance, taking a set of math courses that are one level higher (e.g., calculus and trigonometry as opposed to just algebra 2) increases the level of PSE accessed by almost a full level ( $b = .85$ , e.g., four-year institution as opposed to community college). An increase of 1.0 in high school GPA (e.g., a GPA of 3.5 as opposed to 2.5) has an effect of the same magnitude ( $b = .89$ ). These results indicate the paramount importance of having access to college preparatory courses in high school *and* doing well in these courses.

[Insert Table 4 about here]

**Attainment.** For the attainment analyses, we entered the same set of variables as the access analyses and also added several PSE variables as predictors: full-time/part-time enrollment status, delay in entering PSE immediately after high school, academic credits obtained in the first year, and GPA in the first-year of PSE attendance (see Table 5). The final model explained 47.6% of the variance in PSE attainment.

Of the demographic characteristics, in contrast to the results for PSE access, language status is not a significant predictor of the level of PSE attainment. Also different from the findings for college access is that being Hispanic is a significant negative predictor of the level of attainment ( $b = -.42$ ) while all the other races have nonsignificant effects. Net of other factors, being Hispanic lowers a student's chances of PSE attainment by slightly less than a half of a level.

With regard to family capital and high school factors predicting college attainment, we found significant effects for parental education ( $b = .24$ ), parental educational expectations ( $b = .09$ ), parental discussion ( $b = -.12$ ), highest level of math courses completed in high school ( $b = .47$ ), and high school GPA ( $b = .54$ ). Not surprisingly, the effects of these variables were more

muted than for college access (i.e., smaller  $\beta$ ). Interestingly, parental discussion with child about PSE options had a significant negative effect, and this effect was bigger than any other family capital variable.

All four PSE factors showed large effects on college attainment. Being a part-time student and delaying entry into PSE after high school graduation had a strong negative influence on students' prospects for finishing college, while GPA and the number of academic credits in the first year of PSE were strong predictors of college completion. Being a part-time student alone set back a student's chances for degree attainment by almost a full level ( $b = -.92$ ). An additional 10 academic credits in the first year of PSE, on the other hand, boosted the level of degree obtained by 50% ( $b = .05$ ), while an increase of 1.0 in first-year GPA increased the level of degree obtained by 70% ( $b = .69$ ). These findings indicate the importance of continuing on to PSE right after high school and having a strong and continuing engagement with academic aspects of college after enrollment.

[Insert Table 5 about here]

### **Discussion**

With regard to Research Question 1, EMs, EPs, and ELLs each show a distinct pattern of college going. EMs have the highest levels of PSE access and attainment while ELLs lag far behind both EMs and EPs. EPs' patterns of PSE access and attainment fall somewhere between those of EMs and ELLs, but resemble the patterns of EMs more than those of ELLs. Limited English proficiency, even after controlling for other factors, exerts a major negative influence on students' access to PSE, while coming from a linguistic minority background itself is neither a negative nor a positive factor in college access. However, by the time students graduate from college, language status ceases to be a significant factor. It is now widely accepted in the field of

TESOL that it takes 5 to 7 years at a minimum for ELLs to acquire grade-level academic English proficiency (Cummins, 1981). Given that all the students in the sample were already in the U.S. by Grade 8, the ELLs in the sample may have had enough time to achieve parity with native speakers in academic English proficiency by the time of college graduation. We believe that this explains why ELL was a negative predictor of college access but not college attainment.

Regarding Research Question 2, the regressions show that a variety of variables, not just language proficiency, contribute to differential access and attainment levels. In particular, rigorous academic preparation in high school constitutes a critical form of capital for higher levels of access and attainment (Adelman, 2006). This finding is of particular importance given that studies have shown that ELLs, once institutionally classified as such, are more likely to be placed in non-college-bound tracks (Callahan, 2005; Callahan et al., 2010; Callahan, Wilkinson et al., 2009). Callahan et al.'s (2010) recent analyses of the Education Longitudinal Study of 2002 (ELS:2002) found that linguistic minority students who were placed in ESL programs in high school achieved lower cumulative GPAs *and* had less access to college preparatory courses than linguistic minority students who were not placed in ESL programs *even after controlling for their English proficiency*. In other words, the ESL placement itself has a direct negative impact on course-taking and GPA, two forms of academic capital that have a major impact on students' viability in college.

On the other hand, three of the four predictors of the family capital category were significant, and parental education and parental educational expectations were particularly strong predictors of college access, both being stronger predictors than family income. We find this result encouraging since it suggests that the support that parents can provide to their children, regardless of their family income, can significantly boost children's chances for college

education. Research has constantly shown that first-generation immigrant parents have particularly high expectations for their children's educational achievement in the U.S. (Kao & Tienda, 1995; Portes & Rumbaut, 2001). The findings of our study suggest that high parental expectations constitute a key form of cultural capital that increases immigrant students' access to college.

With regard to college attainment, unlike in college access, being an ELL is no longer a negative factor, which would suggest that the large discrepancy between ELL and EP/EM attainment levels is not due to students' linguistic proficiency per se, but to nonlinguistic disadvantages that are associated with ELLs (Author, in press). When one examines what these nonlinguistic disadvantages may involve, one striking finding is that being Hispanic is a major disadvantage in college attainment, though not in college access. Net of other factors, being Hispanic alone depresses one's college attainment level by almost one half of a level. This finding is in line with other studies that have documented Hispanic students' difficulties with college completion (Fry, 2004; Swail et al., 2005). Fry (2005) points out that one of the reasons for Hispanic students' low college attainment is that they enroll in less selective institutions where the rates of college completion are low. While our study did not investigate the selectivity of the four-year institutions in which NELS participants enrolled, this may very well account for Hispanic being a negative predictor of college attainment. By our estimates, of the 8th graders in 1988, 59.7% of ELLs were Hispanic, compared with 58.7% of EPs and 4.3% of EMs. Being Hispanic, therefore, may be one reason why ELLs, even though no longer disadvantaged linguistically, still have lower attainment levels than EMs.

All of the other factors that were significant in college access were also significant predictors of college attainment, although their effects were less pronounced. In particular, high

school course-taking and GPA continue to be major predictors of college attainment, underscoring the importance of academic preparation in high school not only for accessing college but also graduating from college (Adelman, 2006). Curiously, the parental discussion factor which had a significant positive effect for college access had a significant negative effect for college attainment. One possible explanation is that students who needed strong parental intervention to stay on track before entering college flounder without parental guidance once they are in college.

In addition, we found that all four PSE factors were significant predictors of college attainment, suggesting that what students do after they have been admitted to college influences chances for their persistence (Adelman, 2006; Swail et al., 2005). It is particularly noteworthy that there are some choices that students make that put them at risk: enrolling part-time, delaying entering PSE, and completing only a few credits in their first year of PSE. It is likely that what motivates these choices is financial hardship: Students enroll on a part-time basis, delay entering college, and/or complete only a small number of courses in the first year because they need to work to support themselves (Almon, 2010; Walpole, 2003). While employment is clearly necessary for some students in order to finance their college education, working many hours while in college is a known risk factor (Almon, 2010; Astin, 1985). This study confirms that point. For instance, being a part-time student alone reduces one's chances for PSE attainment by almost a full level: that is, a student who could otherwise obtain a bachelor's degree may in fact attain only an associate's degree just because she is a part-time student. These particular findings in our study, then, point to the importance of providing concrete financial aid information to students, so that those who are eligible can actually receive financial aid instead of resorting to working many hours.

## Conclusions and Implications

As one of the first examinations of ELLs' college-going patterns at the national level, this study found that ELLs are markedly behind both English proficient linguistic minority students and monolingual English-speaking students in college access and attainment. Forty-four percent of ELLs in NELS did not advance to any form of PSE immediately after high school as compared to 23% of EPs and 24% of EMs. Conversely, only 13% of ELLs attained a bachelor's degree 8 years after high school graduation, compared to 26% of EPs and 32% of EMs. This means that only 1 in 8 ELLs earned a bachelor's degree while 1 in 4 EPs and 1 in 3 EMs did. On the other hand, 1 in 5 ELLs in NELS was a high school dropout. From the point of educational equity, such large access and attainment gaps are clearly unacceptable.

Just as importantly, this study found that it is not simply linguistic disadvantages that hold ELLs back. Being an ELL is a major negative factor for college access even after controlling for other factors; however, by the time students graduate from college, this linguistic disadvantage disappears. Yet, ELLs' college access and attainment levels are much lower than those of both EPs and EMs. This suggests that there are other, nonlinguistic, factors associated with being an ELL that hinder ELLs' college access and attainment. Our regression analyses identified a host of factors—students' economic capital, social and cultural capital coming from parents, academic capital that they can accrue in high school, and college attendance patterns—that are likely to differentiate ELLs' attainment levels from those of the other two groups.

### Limitations

Perhaps the major limitation of our analyses is that the first round of data collection in NELS was conducted 22 years ago. Since that time, we have seen major changes in education policy (such as the No Child Left Behind Act of 2001), major changes in the demographics of

the school-aged population (e.g., growth in ELLs and non-White students) and in educational attainment (e.g., decreasing high school dropout), and major changes in college-going patterns (with many more PSE institutions at all levels and more college students). Without more recent longitudinal data, it is impossible to say how these changes have affected educational persistence of ELLs. We look forward to the release of data from the postsecondary phases of ELS:2002 in order to answer these important policy questions.

Other limitations include the exclusion from NELS of ELLs with very low English-language skills in 8th grade. With regard to measures, the parental discussion and school climate subscales used to form composites showed relatively low reliability. There was also a relatively large amount of missing data, especially data for ELLs. While the use of FIML for our analyses compensates for missing data to a certain extent, it is no substitute for the actual data.

### **Implications**

Despite these limitations, the results of this study have a number of implications for both high schools and PSE institutions. First of all, the results of this study call for a move away from the current singular focus on ELLs' high school graduation and a more concerted effort on the part of high schools to prepare ELLs for PSE. A number of organizations have called for better academic preparation of all high school graduates for college-level work (ACT, 2006; Alliance for Excellent Education, 2007; The American Diploma Project, 2004). But ELLs are particularly underprepared for the rigor of college-level studies. The findings of this study indicate that one powerful way to enable ELLs to advance to college is to give them access to college preparatory courses. Whether to place ELLs in ESL courses and how long to keep them there should be decided not just on the basis of their English proficiency, but also on the basis of to what extent

their ESL requirements would be compatible with their taking college preparatory courses (Callahan et al., 2010).

At the high school level, it is also important to provide extra support to ELLs whose parents lack college education. Parental education level is a significant predictor of both access and attainment: College-educated parents are likely to possess cultural capital with which they can help their teenagers navigate the college-going process. However, in cases where such cultural capital is not available from the parents, students will need to receive it from their schools in the forms of college guidance, college fairs, and supportive and on-going relationships with teachers.

This study has also identified added risk factors—delay in entering PSE, part-time enrollment, taking only a few academic credits in the first year, and being Hispanic—and it behooves us to target those ELLs with these additional risk factors and monitor their progress through PSE particularly carefully. Underlying the first three risky enrollment patterns is likely to be a lack of funding: Students delay entering PSE, enroll as part-time students, and take only a few courses because they need to work in order to support themselves. If high schools and PSE institutions increase their effort to provide sufficient guidance on applying for financial aid, fewer students may have to work long hours to finance their college costs. Applying for financial aid is known to be a very confusing process even for native-speaking students with American-born parents (Roderick, Nagaoka, & Coca, 2008); it is not hard to imagine that many immigrant ELLs and their parents find the process overwhelming and decide that working extra hours is a more practical way to finance their studies (Almon, 2010). However, if more students are provided concrete, hands-on help with applying for FAFSA and are also told that working long hours and not being fully engaged with college work at the beginning of their college career

would put them at the risk of dropping out, more students and parents may consider applying for FAFSA in earnest and secure the financial aid for which they are eligible.

Additionally, this study has found that being Hispanic reduces one's chances of completing college even after controlling for other factors. It would make sense then to provide additional support to Hispanic ELL students after they are enrolled, and also to continue examining factors that make it more challenging for Hispanic matriculated students to persist through PSE.

Most fundamentally, however, we strongly urge PSE institutions to recognize ELLs as another underrepresented minority group in higher education and to keep track of their educational records in the same way they do for other underrepresented groups of students. Compared with a variety of statistics available on racial minority, low-income, and first-generation college students' admissions and persistence, we have virtually no information on ELLs' college performance. Most colleges and universities do not even keep a record of how many ELLs are enrolled. As Engle and Lynch (2009) point out, "Experience suggests that students who are not counted won't count when decisions are made and priorities are set" (p. 7). Given that this study has clearly identified large access and attainment gaps between ELLs and their more English proficient peers, it would be incumbent upon PSE institutions to start addressing educational equity for this hitherto unrecognized population.

Table 1

*Three Categories of Language Status*

Variable	N (%)	Definition	Methods of identification
EMs	8,520 (82)	Students who are monolingual speakers of English	Base year survey response
EPs	1,400 (13)	Linguistic minority students who are proficient in English	Base year survey response
ELLs	520 (5)	Linguistic minority students with limited English proficiency	Base year survey response; teacher survey response; high school transcripts

Table 2

*Access to Postsecondary Education, by Language Group, Weighted*

	Language Status			Total
	ELL	EP	EM	
<b>Bachelors institution and above</b>				
N	8,567	92,167	903,336	1,004,070
%	18.9%	37.9%	43.2%	42.2%
Contribution to chi square	-10,533.0	-10,273.2	20,806.1	
<b>Community college</b>				
N	16,041	90,636	644,641	751,318
%	35.4%	37.3%	30.8%	31.6%
Contribution to chi square	1,749.0	13,982.8	-15,731.9	
<b>Vocational/certificate program</b>				
N	824	4,403	36,082	41,309
%	1.8%	1.8%	1.7%	1.7%
Contribution to chi square	38.2	188.5	-226.7	
<b>No PSE</b>				
N	19,866	55,744	508,974	584,584
%	43.9%	22.9%	24.3%	24.5%
Contribution to chi square	8,745.7	-3,898.1	-4,847.6	
<b>Total</b>	<b>45,298</b>	<b>242,950</b>	<b>2,093,033</b>	<b>2,381,281</b>

Table 3

*Attainment in Postsecondary Education, by Language Group, Weighted*

	Language Status			Total
	ELL	EP	EM	
<b>Bachelor's degree or higher</b>				
<i>N</i>	6,597	70,423	727,397	804,417
% of language status group	12.7%	25.9%	32.0%	31.0%
Contribution to chi square	-9,451.6	-13,698.2	23,149.8	
<b>Associate's degree</b>				
<i>N</i>	1,530	13,412	130,406	145,348
% of language status group	3.0%	4.9%	5.7%	5.6%
Contribution to chi square	-1,369.8	-1,787.6	3,157.4	
<b>Certificate</b>				
<i>N</i>	1,889	8,224	74,539	84,652
% of language status group	3.6%	3.0%	3.3%	3.3%
Contribution to chi square	200.1	-628.4	428.3	
<b>Some PSE</b>				
<i>N</i>	16,320	101,718	680,590	798,628
% of language status group	31.5%	37.5%	29.9%	30.8%
Contribution to chi square	386.9	18,202.1	-18,589.1	
<b>HS diploma no PSE</b>				
<i>N</i>	15,527	53,154	509,969	578,650
% of language status group	30.0%	19.6%	22.4%	22.3%
Contribution to chi square	3,982.6	-7,357.8	3,375.2	
<b>HS dropout</b>				
<i>N</i>	9,951	24,661	150,816	185,428
% of language status group	19.2%	9.1%	6.6%	7.1%
Contribution to chi square	6,251.6	5,270.0	-11,521.6	
<b>Total</b>	<b>51,814</b>	<b>271,592</b>	<b>2,273,717</b>	<b>2,597,123</b>

Table 4

*Results of a Regression to Predict PSE Access from a Set of Demographic, Family Capital, High School and PSE Factors (Weighted).*

Predictor	<i>b</i>	$\beta$
<b>Demographic characteristics</b>		
ELL	<b>-.843*</b>	-.033
EP	.275	.030
Female	-.126	-.028
Asian	.301	.026
Hispanic	-.049	-.005
Black	.140	.018
Family Income	<b>.099*</b>	.095*
<b>Family capital</b>		
Parental Education (highest level mother or father)	<b>.229*</b>	.117*
Educational Expectations of Parent	<b>.177*</b>	.168*
Two-Parent Family (1 = two-parent)	-.318	-.049
Parental Discussion with Child about PSE (Composite)	<b>.146*</b>	—
<b>High school factors</b>		
Highest Level of HS Math Completed	<b>.852*</b>	.241*
School Climate (Composite)	-.090	—
High School GPA	<b>.886*</b>	.256*

Note: Composite scores are already in a *z*-score metric (i.e., expressed in standard deviation units); therefore no standardized coefficient is reported for composite scores.

Table 5

*Results of a Regression to Predict PSE Attainment from a Set of Demographic, Family Capital, High School and PSE Factors (Weighted).*

Predictor	<i>b</i>	$\beta$
<b>Demographic characteristics</b>		
ELL	.049	.002
EP	.233	.023
Female	.083	.017
Asian	.210	.017
Hispanic	<b>-.419*</b>	-.037*
Black	-.001	< .001
Family Income	<b>.097*</b>	.082*
<b>Family capital</b>		
Parental Education (highest level mother or father)	<b>.235*</b>	.109*
Educational Expectations of Parent	<b>.087*</b>	.071*
Two-Parent Family (1 = two-parent)	-.249	-.034
Parental Discussion with Child about PSE (Composite)	<b>-.120*</b>	—
<b>High school factors</b>		
Highest Level of HS Math Completed	<b>.471*</b>	.112*
School Climate (Composite)	.018	—
High School GPA	<b>.542*</b>	.135*
<b>PSE factors</b>		
Part-Time Status (1 = part-time)	<b>-.915*</b>	-.170*
Delay in Entering PSE (in years)	<b>-.475*</b>	-.116*
Total Credits Earned in First Year of PSE	<b>.052*</b>	.204*
First-year Undergraduate GPA	<b>.692*</b>	.215*

Note: Composite scores are already in a *z*-score metric (i.e., expressed in standard deviation units); therefore no standardized coefficient is reported for composite scores.

## Appendix A

*Descriptions of the predictors.*

Variable	Type	Source
<b>Dependent variable</b>		
PSE access	Categorical (1-4)	Derived from REFTYPE
PSE attainment	Categorical (1-6)	Derived from HDEG and F4HSDIPL
<b>Independent variable</b>		
EM	Dichotomous	Derived from BY18 and BY21
EP	Dichotomous	Derived from BY18, BY21, BY27
ELL	Dichotomous	Derived from: BY18, BY21, BY27, BY30H, BY36B, BYT1_12, and high school transcripts
Gender	Dichotomous	SEX
Race	Categorical (1-4)	Derived from RACE
Family income	Categorical (1-15)	F2P74
Parental education	Categorical (1-6)	F2PARED
Educational expectation of parent	Categorical (1-12)	BYP76
Family composition	Dichotomous	BYFCOMP
Parental discussion with child about PSE	Continuous	Factor score derived from F2P49D, F2P49E, and F2P49F
Highest level of HS math completed	Categorical (1-4)	Derived from high school transcripts
School climate	Continuous	Factor score derived from F1C95B, F1C95F, and F1C95G
High school GPA	Continuous	HSGPA
Part-time status	Dichotomous	STUPTANY
Delay entering PSE	Continuous	DELAY
Total credits earned in first year of PSE	Continuous	TCREDG
First-year undergraduate GPA	Continuous	GPA1
<b>Panel weight</b>		F4PNLWT

## References

- ACT. (2006). *Reading between the lines: What the ACT reveals about college readiness in reading*. Iowa City, IA: Author.
- Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and Bachelor's degree attainment*. Washington DC: U.S. Department of Education, Office of Educational Research and Involvement.
- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington, DC: U.S. Department of Education, Office of Educational Research and Involvement.
- Alliance for Excellent Education. (2007). *High school teaching for the twenty-first century: Preparing students for college*. Washington, DC: Author.
- Almon, P. C. (2010). *English language learner engagement and retention in a community college setting*. Unpublished doctoral dissertation, Temple University, Philadelphia, PA.
- Arbona, C., & Nora, A. (2007). The influence of academic and environmental factors on Hispanic degree attainment. *Review of Higher Education, 30*(3), 247-269.
- Astin, A. W. (1985). *Achieving educational excellence*. Washington, DC: Jossey-Bass
- Auerbach, S. (2004). Engaging Latino parents in supporting college pathways: Lessons from a college access program. *Journal of Hispanic Higher Education, 3*(2), 125-145.
- Bennici, F. J., & Strang, W. E. (1995). *An analysis of language minority and limited English proficient students from NELS:88* Washington DC: Office of Bilingual Education and Minority Language Affairs, U.S. Department of Education.
- Bourdieu, P. (1977). The economics of linguistic exchanges. *Social Science Information, 16*(6), 645-668.
- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education*. (pp. 241-258). Westport, CT: Greenwood Press.
- Bourdieu, P. (1987). What makes a social class? On the theoretical and practical existence of groups. *Berkeley Journal of Sociology, 32*, 1-8.
- Bourdieu, P., & Passeron, J.-C. (1990). *Reproduction in education, society and culture* (R. Nice, Trans. 2nd ed.). London: Sage.
- Bowen, W. G., Kurzwell, M. A., & Tobin, E. M. (2005). *Equity and excellence in American higher education*. Charlottesville, VA: University of Virginia Press.
- Burkam, D. T., & Lee, V. (2003). *Mathematics, foreign language, and science coursetaking and the NELS: 88 transcript data*. Washington, DC: National Center for educational Statistics.
- Callahan, R. M. (2005). Tracking and high school English learners: Limiting opportunity to learn. *American Educational Research Journal, 42*(2), 305-328.
- Callahan, R. M. (2008). Latino language-minority college going: Adolescent boys' language use and girls' social integration. *Bilingual Research Journal, 31*, 175-200.
- Callahan, R. M., & Gándara, P. (2004). On nobody's agenda: Improving English-language learners' access to higher education. In S. Michael (Ed.), *Teaching immigrant and second-language students: Strategies for success* (pp. 107-127). Cambridge, MA: Harvard Education Press.
- Callahan, R. M., Muller, C., & Wilkinson, L. (2009). *Academic achievement and course taking among language minority youth in U.S. schools: Effects of ESL placement*. Paper presented at the American Educational Research Association Annual Meeting, San Diego, CA.

- Callahan, R. M., Wilkinson, L., & Muller, C. (2010). Academic achievement and course taking among language minority youth in U.S. schools: Effects of ESL placement. *Educational Evaluation and Policy Analysis*, Advance online publication. doi:10.3102/0162373709359805.
- Callahan, R. M., Wilkinson, L., Muller, C., & Frisco, M. (2009). ESL placement and schools: Effects on immigrant achievement. *Educational Policy*, 23(2), 355-384.
- Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. In California State Department of Education (Ed.), *Schooling and language minority students: A theoretical framework* (pp. 3-49). Los Angeles: Evaluation, Dissemination and Assessment Center California State University.
- Darling-Hammond, L. (2007). The flat earth and education: How America's commitment to equity will determine our future. *Educational Researcher*, 36(6), 318-334.
- Deil-Amen, R., & Turley, R. L. (2007). A review of the transition to college literature in sociology. *Teachers College Record*, 109(10), 2324-2366.
- Engle, J., & Lynch, M. (2009). *Charting a necessary path: The baseline report of Access to Success Initiative*. Washington, D.C.: NASH/The Education Trust.
- Fry, R. (2004). *Latino youth finishing college: The role of selective pathways*. Washington, DC: Pew Hispanic Center.
- Guglielmi, R. S. (2008). Native language proficiency, English literacy, academic achievement, and occupational attainment in limited-English-proficient students: A latent growth modeling perspective. *Journal of Educational Psychology*, 100(2), 322-342.
- Hao, L., & Bonstead-Bruns, M. (1998). Parent-child differences in educational expectations and the academic achievement of immigrant and native students. *Sociology of Education*, 71(3), 175-198.
- Harklau, L. (1999). Representations of immigrant language minorities in US higher education. *Race Ethnicity and Education*, 2(2), 257-279.
- Harklau, L. (2000). From the "good kids" to the "worst": Representations of English language learners across educational settings. *TESOL Quarterly*, 34(1), 35-67.
- Harklau, L., Losey, K. M., & Siegal, M. (Eds.). (1999). *Generation 1.5 meets college composition: Issues in the teaching of writing to U.S. learners of ESL*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Hirschman, C., & Lee, J. (2005). Race and ethnic inequality in educational attainment in the United States. In M. Rutter & M. Tienda (Eds.), *Ethnicity and causal mechanisms* (pp. 107-138). Cambridge: Cambridge University Press.
- Holt, L. J., Brenna, H. B., & Johnson, V. L. (2008). Enhancing school engagement in at-risk, urban minority adolescents through a school-based adult mentoring intervention. *Child and Family Behavior Therapy*, 30(4), 297-318. doi: 210.1080/07317100802482969.
- Horvat, E. M. (2000). Understanding equity and access in higher education; The potential contribution of Pierre Bourdieu. *Higher Education: Handbook of Theory and Research*, 16, 195-238.
- Kao, G., & Thompson, J. S. (2003). Racial and ethnic stratification in educational achievement and attainment. *Annual Review of Sociology*, 29, 417-442.
- Kao, G., & Tienda, M. (1995). Optimism and achievement: The educational performance of immigrant youth. *Social Science Quarterly*, 76(1), 1-19.

- Klein, S., Bugarin, R., Beltranena, R., & McArthur, E. (2004). *Language minorities and their educational and labor market indicators: Recent trends. NCES 2004-009*. Washington, D.C.: National Center for Educational Statistics, U.S. Department of Education
- Lamont, M., & Lareau, A. (1988). Cultural capital; Allusions, gaps and glissandos in recent theoretical developments. *Sociological Theory*, 6, 153-168.
- Lareau, A. (2003). *Unequal childhoods: Class, race, and family life*. Berkeley, CA: University of California Press.
- Leki, I. (2007). *Undergraduates in a second language: Challenges and complexities of academic literacy development*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Louie, V. (2005). Immigrant newcomer populations, ESEA, and the pipeline to college: Current considerations and future lines of inquiry. *Review of Educational Research*, 29, 69-105.
- Matsuda, P. K. (1999). Composition studies and ESL writing: A disciplinary division of labor. *College Composition and Communication*, 50(4), 699-721.
- Matsuda, P. K., Ortmeier-Hooper, C., & You, X. (Eds.). (2006). *The politics of second language writing: In search of the promised land*. West Lafayette, IN: Parlor Press.
- McDonough, P. M. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany, NY: State University of New York Press.
- Morales, A., Herrera, S., & Murry, K. (2009). Navigating the waves of social and political capriciousness: Inspiring perspectives from DREAM-eligible immigrant students. *Journal of Hispanic Higher Education*, Advance online publication. doi:10.1177/1538192708330232.
- Mosqueda, E. (2007). *English proficiency, tracking, and the mathematics achievement of Latino English learners*. Unpublished doctoral dissertation, Harvard University, Cambridge, MA.
- Muthén, L. K., & Muthén, B. O. (1998-2007). *Mplus user's guide: The comprehensive Modeling program for applied researchers* (5th ed.). Los Angeles, CA: Muthén & Muthén.
- National Clearinghouse for English Language Acquisition. (n.d.). *NCELA FAQ: How many school-aged Limited English Proficient (LEP) students are there in the U.S?* Retrieved December 16, 2009, from <http://www.ncela.gwu.edu/expert/faq/01leps.html>
- Núñez, A.-M. (2009). Latino students' transitions to college: A social and intercultural capital perspective. *Harvard Educational Review*, 79(1), 22-48.
- Núñez, A.-M., & Cuccaro-Alamin, S. (1998). *First-generation students: Undergraduates whose parents never enrolled in postsecondary education*. Washington DC: U.S. Department of Education. National Center for Education Statistics.
- Núñez, A.-M., & Kim, D. (2009). Modeling a multicontextual perspective on Latino students' college participation: student, school, and state-level effects. Unpublished manuscript current under review.
- Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education*, 75(3), 249-284.
- Percy Calaff, K. (2008). Latino students' journeys toward college. *Bilingual Research Journal*, 31, 201-225.
- Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *Journal of Higher Education*, 76(5), 485-518.

- Plank, S. B., & Jordan, W. J. (2001). Effects of information, guidance, and actions on postsecondary destinations: A study of talent loss. *American Educational Research Journal*, 38(4), 947-979.
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24, 1-24.
- Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Los Angeles: University of California Press.
- Roberge, M., Siegal, M., & Harklau, L. (Eds.). (2009). *Generation 1.5 in college composition: Teaching academic writing to U.S.-educated learners of ESL*. New York: Routledge.
- Roderick, M., Nagaoka, J., & Coca, B., Moeller, Eliza. (2008). *From high school to the future: Potholes on the road to college*. Chicago, IL: Consortium on Chicago School Research at the University of Chicago.
- Rumbaut, R. G. (1995). The new Californians: Comparative research findings on the educational progress of immigrant children. In R. G. Rumbaut & W. A. Cornelius (Eds.), *California's immigrant children: Theory, research, and implications for educational policy* (pp. 17-69). San Diego, CA: Center for U.S.-Mexican Studies, University of California, San Diego.
- Shapiro, S. (2009). *From isolated remediation to collaborative mediation: Confronting "separate but equal" in EAP*. Unpublished doctoral dissertation, University of Washington, Seattle, WA.
- Solórzano, R. W. (2008). High stakes testing: Issues, implications, and remedies for English language learners. *Review of Educational Research*, 78(2), 260-329.
- Spack, R. (1997). The acquisition of academic literacy in a second language: A longitudinal case study. *Written Communication*, 14(1), 3-62.
- Spellings, M. (2005). *Academic gains of English language learners prove high standards, accountability paying off*. Retrieved September 20, 2008, from <http://www.ed.gov/news/speeches/2005/12/12012005.html>
- Stanton-Salazar, R. D. (2004). Social capital among working-class minority students. In M. A. Gibson, P. Gándara & J. P. Koyama (Eds.), *Social connections: U.S. Mexican youth, peers, and school achievement* (pp. 18-38). New York: Teachers College Press.
- Strang, W. E., Winglee, M., & Stunkard, J. (1993). *Characteristics of secondary-school-age language minority and limited English proficient youth (Final analytic report, contract no. T292001001)*. Arlington, VA: Development Associates.
- Suárez-Orozco, C., Suárez-Orozco, M. M., & Todorova, I. (2008). *Learning a new land: Immigrant students in American society*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Swail, W. S., Cabrera, A. F., Lee, C., & Williams, A. (2005). *Pathways to the bachelor's degree for Latino students*. Washington, D.C.: Educational Policy Institute.
- The American Diploma Project. (2004). *Ready or not: Creating a high school diploma that counts*. Washington, DC: Achieve.
- Thomas, W. P., & Collier, V. P. (1997). *School effectiveness for language minority students*. Washington, DC: National Clearinghouse for Bilingual Education.
- Thomas, W. P., & Collier, V. P. (2002). Accelerated schooling for all students: Research findings on education in multilingual communities. In S. Shaw (Ed.), *Intercultural education in European classrooms: Intercultural education partnership* (pp. 15-35). Stoke-on-Trent, England: Trentham.

- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attribution*. Chicago: The University of Chicago Press.
- U.S. Department of Labor. (2006). *America's dynamic workforce: 2006*. Washington, DC: Author.
- Walpole, M. (2003). Socioeconomic status and college: how SES affects college experiences and outcomes. *The Review of Higher Education*, 27(1), 45-73.
- Walpole, M. (2007). Economically and educationally challenged students in higher education: Access to outcomes. *ASHE Higher Education Report*, 33(3), 1-113.
- Wolf, M. K., Herman, J. L., Bachman, L. F., Bailey, A. L., & Griffin, N. (2008). *Recommendations for assessing English language learners: English language proficiency measures and accommodation uses (CRESST Report 737)*. Los Angeles, CA: National Center for Research on Evaluation, Standards, and Student Testing (CRESST).
- Zamel, V. (1995). Strangers in academia: The experiences of faculty and ESL students across the curriculum. *College Composition and Communication*, 46(3), 506-521.
- Zehr, M. A. (2009). Adopted tongue: English-learners pose policy puzzle. *Education Week*, 28(17), 8-9, 11, 13, 15-16.